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## THE FUTURE OF MEDICINE\*

BY JOSEPH COLLINS, M. D.

The generation that is now passing has witnessed many things that are far more marvelous than miracles: the automobile, the aeroplane, the radio, cinema, wireless telegraphy and telephony. They are so commonplace now, so much a part of life that we scarcely think of them, save in terms of utility. During the same period there has been a most extraordinary change in our own profession. Medical schools and hospitals have found shelter in universities, and the teaching therein has become an integral part of the curriculum. Medicine has been given its proper place as the science of human biology and human psychology. We are now ready to develop that science, and this medical center is an earnest of such determination. The ship of medical science is ready to sail. The officers have been commissioned, but the chart is not yet definitely mapped. You have asked a stranger to make some suggestions. He has sailed the sea for 40 years and knows many of the shoals and some of the safe harbors.

You have heard it said that there is nothing new under the sun. My conduct today denies the truth of that statement. It is entirely new for me to enter the realm of prophecy. Though I have been for many years devoted to Isaiah, and though I still get a thrill from reading the first 39 chapters of the canonical book that bears his name, no admiration for their author ever fired me to attempt that which he did so masterfully nearly 3,000 years ago. But I am trying it now, for I am attempting to say to you what the future of medicine is likely to be.

The statements that I shall make are my own convictions colored possibly by my hopes. I realize keenly that some of the things that I shall say will not be in harmony with your own thoughts and convictions, but the opportunity has been given me to see the transformation of what might be called medieval medicine to modern medicine and to observe the currents of progress which, as I see them, are leading in certain definite directions. That emboldens me.

\* Dedicatory address at Medical Center, State University, Louisiana, May 10, 1932.

My theses are as follows:

(1) Medicine of the future will have fewer and less intransigent diseases to combat. It will steadily become more specialized. The specialist of the future will be a detective—not one who passes sentence.

(2) Medicine of the future will be more and more socialized, and proportionately as it becomes so, individual practice of medicine will become more restricted. The time is at hand, or approaches, when man will insist that everything science can do to spare disease shall be done by the State or nation at its expense, and furthermore, that it shall care for those who have the misfortune to be afflicted.

(3) Medicine of the future will present a less alluring prospect for those who are ambitious for financial success, and a more alluring prospect for those sensitive to intellectual and humane impulse.

(4) It is incumbent upon those to whom it is given the opportunity and upon whom is imposed the duty to prepare men and women for the practice of medicine to inform them that their important work will be to prevent disease, to correct error, to uproot prejudice, to teach their fellows how to adapt themselves to their environment that they may love profitably, live successfully, die happily and leave after them a reputation for kindness.

I see the approaching end of medicine that has existed the past 50 years, more in its practice than in its pursuit. In light of what has been accomplished in that time, we may legitimately look forward to a world that will be comparatively free from disease save for those brought into it by the exigencies of life as it will then be lived. We shall have conquered tuberculosis and arthritis; we shall have wrought the secret from cancer and stormed the citadel of the common cold and influenza. Our diseaseless world will not stem entirely from the laboratories. Indeed, I think it will be dependent in considerable measure upon what may be called universal enlightenment, and in a measure at least upon chance or accident. By the latter, I mean we may come accidentally upon the knowledge that some substance taken into the body as food or condiment has had removed from it in an effort to refine it, some constituent which a ductless gland requires that it may function properly.

The time approaches when the layman will know as much about the causes of ill-health as the average physician knows now. Why shouldn't an intelligent individual who has been subjected to the



discipline of reasonable education know about digestion, assimilation and elimination? Why shouldn't he know the significance of the metabolic rate and its dependency on internal secretions? Why shouldn't he know the fundamental principles of the different varieties of hygiene? Why should it not be generally known that pus is a dangerous thing for an individual to carry around—and especially dangerous if it be in a tissue that subjects it to pressure or provides it with a large absorptive area? I do not mean to say that education will fit the individual to be his own doctor, but it will and should provide him with information that he can utilize to the advantage of his own health and that of his community.

It used to be said that the doctor who knew syphilis in its every display knew medicine. That type of doctor is going to disappear for venereal disease will diminish proportionately as enlightenment increases. No one who has not been in close contact with the diseases of the nervous system that flow from syphilis can have any idea how rapidly they are disappearing. Acceptance of the legitimacy, morality and expediency of birth control will make steadily decrease the diseases that are founded in heredity.

The diseases that will bulk large in the medicine of the future are those that result from disordered activity and diseases of the ductless glands and so-called nervous diseases, particularly the psychoneuroses—whatever be the forces and characteristics of modernity, it must be admitted that with its advent there has come an increase of nervous and mental disorder that is appalling, and I think, alarming. So far little has been done to counteract the tide. In fact, it required a World War to make the profession realize that psychoneuroses were one of the major problems of medicine.

Gradually there has been crystallization of belief and conviction that some maltreatment or manhandling of that colossal energy with which man is endowed in order that the race may continue is responsible for most of our maladjustments, many of our inadequacies and some of our prejudices. Slowly and unwillingly the admission is being wrung from the world that sex has an importance for mental health and bodily efficiency which Christianity and convention deny. If we are to stem the rising tide of insanity in this country, and if we are to get a commendable degree of sweet reasonable-

ness about how our fellows should drink, think and act, we must coordinate our sexual with our intellectual and somatic activities. The day is dawning when sex will be neither secret nor sin. The guide to pilgrims in that dawn should be the physician and he should accompany them until they reach the place where their natural discords may be harmonized—their personalities unified. That they may be competent guides for this purpose, they must be properly instructed. So far, save in few exceptional instances, they have had no instruction. Unfortunately the medical curriculum does not include such instruction and any information physicians may have is usually based upon experience which generates fear and falsity or it is a remnant of the framework of morality and taste obtained from bigot, fanatic, or ignoramus.

I have said that the medicine of the future will steadily become more specialized. It may be ungracious to say that we have more and poorer specialists than any western country, but it is true. The specialist of the future will be unlike the specialist of the past. He will neither be machine-made, nor self-stamped. The specialist of today does not see the patient until after the disease has caused irreparable damage. The specialist of the future must be so trained that he will detect the disease before such change has taken place in the tissue. The specialist of the future must be a glorified general practitioner who confines himself to one field.

The effect produced upon many physicians by the words *socialization of medicine and state medicine* is not unlike that which a red flag is said to have on a bull. In the first place many of them have no concrete idea of what is meant, and in the second place they assume it is another plan to take away their bread and butter, the government having already deprived them of cakes and ale. The aim of socialized medicine is to prevent and cure disease through collective effort with the financial support of one or more social or governmental units; state medicine is socialized medicine directed and supported by the state or by the federal government. A privately endowed medical school which maintains a clinic whose purpose is to prevent and cure disease is practicing social medicine. If a school is under the direction of regents appointed by the state, it is not only socialized medicine, it is state medicine in addition. An industry with a health service that employs doctors, nurses,



dentists and social workers is engaged in socialized medicine. When a state or an individual or a group of individuals, authorized to spend the state's funds, puts into operation any measure seeking to prevent or cure disease, that measure is a form of state medicine. All this being so, I am unable to see why anyone should be opposed to state medicine. Physicians have to give their services gratuitously to the poor—so if a state by drainage and quarantine can keep them from falling ill, and by providing them with vaccines and vitamins, sunlight clinics and sanatoria to restore them to health, the medical profession should be grateful for the service. The rub, of course, is that it will prevent the well-to-do from falling ill also, and thus touch the doctor in a place which seems to be coming more vital every day, namely, his purse. The first thing that every medical student should be made to realize is that if he wants to make money, he should not go on with medicine.

Another objection to socialized medicine that I frequently hear is that it would fetter the physician's initiative, inhibit his ambition and catalyze his energy. In increasing numbers he will be employed by state, industry or organization, and there will be no incentive for him to work harder than is necessary to keep his job. If this were true, we should now have a country full of supine, indifferent teachers and professors.

One of our many delusions is that the sick poor are cared for gratuitously. Physicians give them their services without pay, but hospitals by and large seek to get from them as much as they can. I know that there are city, county and state hospitals whose patients are paid for by the taxpayer, but aside from them, nearly all hospitals whose claim is to take care of the sick without regard to creed, race or purse, have a minimum rate and to pay this or any part of it often works a profound hardship. These hospitals have free beds, but the historical difficulty of the camel is nothing compared to getting a patient into one of them. The time is coming when this will not be tolerated. The machinery of the government in this country must soon be overhauled. There is a possibility that it may be discarded for a new model. The way to avoid such drastic change is to hurry up and play fair. One of the best ways of playing fair is to safeguard the health of the people, and to help those who have lost it, to regain it.

No one can have lived, observed or reflected during the years that separate us from the cessation of the war and remain insensitive to the fact that the western world is making giant, rapid strides toward socialism. There is a tide surging through this world whose waves are saying, ever louder, "Man shall not be without food, raiment and shelter; without occupation and recreation; without relief from pain and infirmity." Until recently the voice of the waves was rather faint in this part of the world, but those individuals who accepted so nonchalantly the reputation of being supermen, the bankers—they have supplied it with a megaphone and it will be little short of a miracle if the people of this "Land of the free and home of the brave," do not soon harken to the message of these waves.

There is a variety of "New Thought" that is sweeping the whole world. It maintains that man is superior to mammon in whatsoever form it may reveal itself—it insists that man shall not be exploited to promote financial and material gain and it demands that all mankind shall have a place in the sun sometimes. It is passing strange that which the Christian religion has been unable to accomplish is now being put over by a people who have dispensed with religion—but it is not Russia alone that is making these demands, it is practically all of Europe.

Medicine as a profession does not seem so inviting as it did after Pasteur, Lister, Koch, Starling and a few others disturbed the face of its waters. It shares one of the predicaments of the church. Fewer good minds are entering it. The reasons why this is so need not be enumerated. That which has come to be called the "Spirit of Service" is weak compared with the spirit of self-realization and safety. There will always be young men who are curious to know for the sake of knowing and for the benefits that mankind may experience from such knowledge. They will continue to go in for medicine, but it is more than likely that they will not be so numerous as they were two, or even one, generation ago. Another reason is that fortunately we have less than one-third the number of medical schools we had 20 years ago, and whereas anyone who had a small amount of money could enter one of them, it is now not only difficult to get in, but expensive to stay in.

Medicine of the future will offer far less chance for success and

happiness that comes from economic independence, from being surrounded with family, and from opportunities of spiritual recreation than it did in the past, but there will always be young men to whom great financial success does not make dominant appeal, and there will always be a sufficient number of physicians who achieve a position of respect, authority, and even affection in any community to suggest to the budding doctor that he not only may do likewise, but go him one better.

It may not be the province of the medical school to tell its students, after it has had opportunity to observe and estimate them, that they are not adapted to medicine, but I hold it should be their privilege, and were they to exercise it, there would soon be less drift-wood in the profession. I do not believe that the present way of selecting medical students is the best way that can be devised. Five hundred apply and 50 are taken. The chance of getting 50 good ones, it seems to me, would be greatly enhanced were 200 taken. When the faculty, or its most discerning member, were convinced that there were 50 promising ones among the lot, 150 might go. There would be some wailing and gnashing of teeth, but the experience might be beneficial and profitable. It is a mistake to go into a profession for which you are not fitted, and it is a mistake to stay in it after that has been found out. It is like a man who has a pair of shoes that do not fit him. If he insists upon wearing them, he will be crippled.

A paradoxical state of affairs exists in this country about doctors. We have twice as many as are needed and not half enough to go around. In other words, we have twice as many doctors in proportion to the population as England and Germany, and yet there are broad stretches of our country without a physician. There are many reasons why doctors shy the country; it is hard to make a living there and harder even to live there. The training they have had in school and hospital does not fit them to be resourceful and self-reliant. They cannot turn to technician, specialist, aide and coadjutor in the way they could and did while in the hospital, and the result is they are dejected, dissatisfied and incomplete. Then it occurs to them they will be specialists. They go to New York, Chicago, Philadelphia, or other large city, and after a few months,

they are specialists and yield to the urban urge. There is no future for them in the future medicine.

They who are to practice the medicine of the future successfully for themselves and advantageously for their fellows should be informed what it demands. In order that they may be prepared, they must be told that disease includes bigotry, prejudice, hatred, self-righteousness, and that their country seems to be an extremely favorable place for the growth and display of these deformities. They must be urged to combat them ardently and patiently, and with the same vigor that they combat killers of the body. They must be told that the more they concentrate on preventing disease and the more they leave the curing of it to God, as Ambrose Pare said he did, the more completely do they measure up to the ideal physician. Every day of their student life they must be told that in order to shape disease toward righteousness, it must be detected early. Where and how this is to be accomplished is the pressing problem of medical education. Certainly it cannot be done in the hospital. When one is ill enough to be hospitalized, an intelligent layman can usually tell what is the matter with the patient, if he is provided with complete laboratory reports. It will have to be done in the outpatient department and under the direction of teachers who are provided both by nature and education with the requisite skill and intuition.

The opportunity is given this institution to be a pioneer in such work and it is my sanguine hope and fervent wish that those who are responsible for its brilliant inception will make it an example for our profession and for our country.

Were it permitted pious, provident Jean Louis to see the great hospital that has resulted from his generous legacy 200 years ago, and its ideal bride, the Medical Center, doubtless he would be gratified, and were he permitted to say a word, it is not unlikely that he would say with gallant gesture:

"It is to the Andalusian Don Andres Almonaster that your *reconnaissance* should go—not to the simple sailor that am I."

But one in the flesh who is tremendously impressed by your accomplishment says:

"Mr. President and Board of Supervisors of Louisiana State University. I congratulate you on your faith in the future of medicine and the part your institution will play in it."

## NEXT STEPS IN A MENTAL HEALTH CAMPAIGN\*

BY SANGER BROWN, II, M. D.,

ASSISTANT COMMISSIONER, NEW YORK STATE DEPARTMENT OF MENTAL HYGIENE

Psychiatry within less than 100 years has passed through a humanitarian period of the first importance in the care of patients to a period of careful scientific research which has included not only the study of the unsound mind, but also the study of the functionings of the normal mind. While this knowledge of mental functions is very valuable in the treatment of patients suffering from mental disease, it should be put to a much broader use, namely, toward the prevention of mental disorders of all kinds.

When the question of the prevention of mental disease is raised, reflections, none too optimistic, pass through the minds of many persons, even those closely associated with the mental hygiene movement. It may be recalled, however, that it is within the memory of many persons when pulmonary tuberculosis was regarded as a dread disease and thought to be acquired through hereditary predisposition chiefly. Yet with no specific discovery as to treatment, in fact in the face of most expensive and prolonged care, informed persons now feel no undue alarm about the outcome of a case of early pulmonary tuberculosis. This feeling of confidence is warranted, for United States census reports for the registration area show that the death rate from tuberculosis per 100,000 population declined from 194 in 1900 to 173 in 1910, to 114 in 1920, and to 67 in 1930.

Cancer is one of the serious diseases of this present generation. The death rate of cancer has increased during recent years, yet it may be predicted that succeeding decades will see a gradual decrease in the death rate from cancer even if no specific treatment is found. The leaders of the anti-cancer campaign are spreading information about early attention to small tumors, skin abrasions and other early manifestations of cancer. This will result in early operations, the use of radium or other forms of treatment and the saving of thousands of lives in the years to come.

Despite the fact that most advanced cases of mental disease cannot be cured, favorable predictions for the prevention of a

\* An address delivered November 11, 1931, at Niagara Falls, N. Y., before the New York State Association for Social Work.



considerable percentage of mental disorders are warranted. Within the past 25 years much has been learned of the causes of mental disease, which is of practical value for prevention. It is now known that early treatment of the patient when the first mental symptoms appear is often already too late. The important facts which have been learned is that for a period of from 10 to 15 years preceding an actual mental breakdown there is a time when the patient suffers from maladjustments, mental conflicts, undue repression and a number of other unhealthy mental states. The period of treatment is during this time of conflict and maladjustment.

How are patients to be induced to seek treatment during the early years of mental conflict? Most persons tend to hide complexes, conflicts, feelings of inferiority, fears, etc., even from their closest friends.

The public in general must be informed about mental hygiene. At present its laws are understood by a small group only. Public interest is necessary if a new philosophy of value to mankind is to take root. Conceptions of life which play a real part in human progress generally start from humble beginnings and make slow progress at first. Science has had a long conflict with alchemy, astrology, witchcraft and other superstitions. Knowledge of public health has come about gradually. If mental hygiene is to be ranked with the important conceptions of life, its spread will be slow in the beginning. In addition to pioneers like Clifford W. Beers and the late Dr. Thomas W. Salmon the movement should continue to produce great leaders. We have seen the significance of leadership in the work of Dorothea Dix in securing adequate care for the insane, in that of Florence Nightingale in developing the nursing profession and in that of Horace Mann in promoting primary education. The effort of one zealous exponent is of tremendous importance in movements of this nature.

It has been suggested that a textbook on mental hygiene be prepared for children in elementary schools. Mental hygiene would then be taught like psychology, mathematics, French verbs or any other school subject. A friend tells of an experience with a small textbook, entitled, "Good Manners for Children," humorously illustrated, but of very practical value in bringing up small boys.

He purposely left it where his small nephew would come upon it unawares. The nephew surreptitiously examined the book and then insisted upon having it as his own. Had he been asked to read it, he undoubtedly would have scorned to do so. Such indirect methods may perhaps be excused, just as we excuse mothers who succeed in getting their children to take codliver oil by making it a privilege rather than a duty.

In addition to an inspired leadership or a genius with a compelling textbook, the conventional methods must be used. The usual means of public education through pamphlets, public lectures, newspaper articles, radio talks and bulletins, are necessary. The New York State Department of Mental Hygiene has had some experience in this direction. A series of leaflets on mental hygiene have been prepared and made available for public distribution. Over one-half million of the leaflets had been distributed up to July 1, 1931.

The department has also published a monthly mental hygiene bulletin since October, 1930, which appears to interest school teachers, social workers and others in the field of child welfare. Its circulation has more than doubled in one year.

Radio talks given from time to time have been published by 30 or 40 newspapers on various occasions. Thus mental hygiene is following a somewhat similar course as public health in the field of public education.

The National Committee for Mental Hygiene, an active organization in all fields of mental health work, has, through lectures, leaflets, pamphlets and books, contributed more than any other organization, State or national, to the furthering of this movement.

Do those interested in mental hygiene over-estimate its importance? There are many forces today purporting to make the world better. Better living conditions for everyone, better homes, less manual labor, less illness and disease, an education for everyone, less poverty and want, even distribution of wealth and numerous other advantages—these are what are offered the public. But there are other forces acting in the opposite direction. The use of machinery which seems to make man more machine-like, mechanical forms of entertainment which discourage man from making an effort to entertain himself; the tendency toward conformity in

young persons in order to fit them into definite places in the world; these and other movements are a challenge to our boasted progress.

In the face of these movements mental hygiene may seem to play an insignificant part. Still, since it deals with man's mind and hence with the fundamental basis of thought, it should offer an indispensable philosophy of life. What it proposes to teach is not easy to state in simple terms. Among other things it points that the suffering in many persons' lives by way of conflicts, repressions and disturbing complexes is often unnecessary; that suspicion, resentment and other states of mind which result in unhappiness, might be avoided by following the laws of mental health; that many of the mental ills of man today are the result of his failure to understand some of his urges and emotions which are a part of the unconscious activities of his mind. Mental health further teaches that since much more may be accomplished by a mind that is free and unhampered than by one which is limited by inhibitions and restrictions, methods in the teaching of young persons should be used which will encourage the development of mental capacities through appreciation of both the special assets and special liabilities of the individual child.

From a practical standpoint, what can be done for the individual patient? In the treatment of such persons much benefit may result from the patient carefully talking over his problem with the physician. If the latter is experienced, his knowledge of similar problems in the lives of other persons will help him to wisely advise the one. The symptoms themselves seem to lose some of their force simply by free discussion. This relief has been compared to that experienced by the opening of a painful abscess. Likewise, it is of value for these patients to know that their trends of thought which they regard as strange or unusual are very similar to those of many other persons. They learn that their symptoms, thoughts and impulses are not unique, but are common to all mankind. This knowledge often releases mental tension and is necessary before the patient can be started on the road to recovery.

However, there never has been a new philosophy, a new religion or even a fantastic theory for which its followers have not claimed the prerogative of saving mankind. Certainly mental health can make no claims to service which have not been made before. Per-



haps it will be conceded that its methods are the result of special scientific knowledge in the particular field of the function of the mind. This knowledge has come from investigation largely it is true of minds which do not function normally; but just as the study of cancer tissue has lead to a knowledge of how normal tissue grows, so a study of the unhealthy mind has brought an understanding of normal mental activity.

Perhaps the supporters of the mental health movement feel, therefore, justified in advancing rules for mental health as applied to the care of problem children against traditional theories on this subject; and to question conventional methods of education for children showing certain handicaps or limitations; or even to doubt the wisdom of strict enforcement of the law when there are unusual circumstances traceable to the abnormal mentality of the offender.

In mental health work in the future will it not be probable that schools will have psychiatric clinics, psychologists, visiting teachers, psychiatric social workers and all of the necessary special classes as a matter of course in the same way as there are now school physicians, school nurses, dental hygienists and physical instructors. Will not the attendance officer of the future be a visiting teacher or social worker and will not the truant school become an institution for child study?

Future nursery schools for very young children may well become training centers not so much for the children, but for parents.

Will not children's courts be transformed into child guidance centers and the court feature if retained at all, chiefly be for the control of patients who through neglect or abuse or other misconduct, mistreat their children, the children's court judge becoming a psychiatrist; and the court probation officer, a psychiatric social worker?

Will not progressive localities establish a mental hygiene clinic at the welfare center of the community? This clinic will be of routine service in examining those suspected of mental disease or mental defect, but its main function will be to give advice to mal-adjusted, perplexed, misguided and ill-advised or misbehaving individuals.

As a result of this advance in a mental health program, perhaps one can look forward to the time when an inferiority complex will

be quite as serious a reflection upon one's bringing up as the presence of decayed teeth or infected tonsils; when rationalizing rather than reasoning in arriving at a conclusion will be recognized even by the novice as the workings of an untrained and uncritical mind; when to suffer from a mental conflict will be regarded as quite as serious a thing as to suffer from diabetes; and when an individual who is repressed and controlled by inhibitions will be regarded in the same class as one who does not know of the need of open windows in sleeping rooms or fresh air in the office.

Will it be possible for mental health to do for the mind what public health and preventive medicine have done for the body? If its principles become generally known, they should help to make a sturdier race intellectually, a race whose mental assets will be developed to the uppermost through proper teaching in youth.

Through application of the laws of mental health, is it beyond hope that institutions for mental disease will in the course of time fail to show a yearly increase, later arrive at a standstill in their populations, and eventually even show a decline. Perhaps this is too much to expect in the lives of most of us present. This generation is only on the threshold of the mental health movement whose possibilities it is impossible to visualize.

## A STATE RESEARCH PROGRAM IN MENTAL HYGIENE\*

BY HORATIO M. POLLOCK, PH. D.

Mental hygiene is related to all phases of human life. Everything that affects the human mind for good or ill comes within the sphere of mental hygiene. Accordingly there is mental hygiene of the home, of the school, of the store, of the factory and of all social activities. The aim of mental hygiene is to promote mental health, vigor and efficiency; and to lessen mental illness, weakness and failure. Mental hygiene principles are now being used in child guidance work, in all departments of social work and in the management of hospitals for the physically and mentally ill and of institutions for the defective and delinquent.

In public welfare work the term "mental hygiene" is unfortunately used in a restricted sense as applying principally to the treatment and prevention of mental disease, mental defect and convulsive disorders. State departments of mental hygiene are especially charged with the supervision and care of the mentally ill, the mentally defective and the epileptic.

In discussing a State program for research in mental hygiene I shall limit myself to the narrower field. The most pressing need for research from the standpoint of the State as an organization arises from the urgent demand for relief from present excessive burdens. Any research program, however, should take into account the welfare of the individual citizens as well as the needs of the State as a political unit.

Most of the states of the Union, several years ago, assumed full responsibility for the care of the insane, feeble-minded and epileptics. Year by year the burden of the care of these classes has grown heavier, and the prospects for relief in the future are not at all favorable. Now the question is asked: Can help be obtained from mental hygiene?

The desired relief might be secured in three ways, namely:

1. By reducing the number of admissions to State institutions.
2. By shortening the period of institution residence.
3. By lowering the annual per capita cost of maintenance of patients.

\* Presented at National Conference for Social Work at Philadelphia, May 17, 1932.

The mere mention of these ways of lessening the burden suggests important lines of research. Considering for the moment only the problem of mental disease, it is clear that reduction in the rate of incidence is of the greatest importance. How can this be accomplished? This is in part a research problem and in part an administrative problem. Before much progress can be made in lowering the incidence rate of dementia præcox, manic-depressive psychoses or mental disease with arteriosclerosis, more must be learned concerning the primary causes of these disorders and the means to be used in preventing them. It will also be necessary to acquaint the public generally with every newly-discovered method of prevention.

Strange to say, in those forms of mental disease in which the causes and means of prevention are well known, progress in reducing incidence is deplorably slow. I refer particularly to alcoholic and syphilitic mental diseases. During the war period and in 1919 and 1920, the possibility of the elimination of alcoholic mental diseases was clearly demonstrated. The increase in the incidence of these diseases since 1920 indicates that many people are unwilling to forego personal gratification for the sake of their own health or the public welfare. The continued high rate of incidence of syphilitic mental diseases, despite known causes and known methods of control, is likewise discouraging. Judging from our experience in these two fields we need not only research work to give us knowledge and control of disorders but also efficient administrative work to apply among the population generally the measures required to bring the desired relief.

Considering more closely plans for research in mental hygiene fields, it appears that in a large state four principal types of investigation are indicated as follows:

1. Laboratory studies.
2. Clinical studies.
3. Field studies.
4. Demographic studies.

We shall briefly discuss these in the order mentioned.

1. Laboratory studies. The proposed laboratory studies would include pathological, physiological, psychological, serological, bac-

teriological and chemical research. On account of the vast amount of equipment and materials necessary to carry on research in these various fields a special scientific institute should be provided for this purpose. Each of the fields of research should have a separate laboratory which would be manned by experts and furnished with all of the equipment and supplies necessary to carry on research in the most approved manner. The various laboratories should cooperate fully in making their contributions to the studies undertaken.

The New York State Psychiatric Institute which forms a part of the Columbia Medical Center is now carrying on research work in the manner just described. If other states were to make similar provision for laboratory research, rapid progress in this field should be made.

2. Clinical studies. Clinical studies require comparatively little equipment and may be carried on in any hospital. However, in order that there may be cooperation in clinical and laboratory studies, it is highly important that a clinical department be provided in the scientific institute. Patients specially selected for study could be cared for in the institute while the research work is progressing. If this were done all known methods of approach to the disease under investigation could be utilized. New York State follows this plan. In its research institute are accommodations for 210 patients.

The state hospitals and state institutions for mental defectives and epileptics should also conduct clinical research work in cooperation with the scientific institute. The best results will be obtained when the several agencies work together for the accomplishment of a common purpose.

3. Field studies. Research field studies would be conducted by trained social workers and would deal with problems relating to environmental and hereditary factors in the causation of mental and behavior disorders. In the newly-developed field of child guidance such studies are of the highest importance. They should reveal primary causes and suggest ways by which mental disease and anti-social conduct might be averted. Such studies to be most effective should be carefully planned in advance and should be comprehensive enough to yield significant results.



4. Demographic studies. Demographic studies would deal with the problems arising from the presence of mental disease, mental defect and epilepsy in the population. These studies would include rates of incidence and of expectation of such disorders among different classes, trends in the various forms of disease, etiological factors, results of treatment, economic costs, forecasts of institution population, etc. Such research work could be best conducted by a statistical bureau connected with a state department. Such bureau would also cooperate with other research agencies within the department.

Specific problems awaiting research are too numerous to mention. The most urgent are those in child guidance and other preventive fields. While the spirit of science bids us seek truth and knowledge in all human relations, the spirit of wisdom imperatively directs our inquiries toward the prevention and alleviation of human suffering and the lessening of social burdens.

In closing, I would add a word of caution against undue optimism. We must not expect that research in this field will promptly yield a panacea for all mental disorders. The problems are too complicated for easy solution. We know, however, that well-planned research is sure to lead to helpful results. There can be no doubt that rich rewards await prolonged intensive study. It is for us to make our efforts commensurate with the magnitude and importance of the task.

## OPHTHALMO-ENCEPHALO-MYELOPATHY\*

### *Clinico-Pathological Study of a Case\*\**

BY S. E. BARRERA, M. D.

Since Sir Clifford Albutt<sup>1</sup> (1870) presented his paper, "On the Ophthalmoscopic Signs of Spinal Disease," many reports have been made in the literature concerning cases in which, after specific infectious processes, in particular syphilis, had been excluded, involvement of the spinal cord and optic system constituted the predominant pathological findings. The cases reported by Steffan,<sup>2</sup> Genet and Devie,<sup>3</sup> Hillion,<sup>4</sup> Lapersonne,<sup>5</sup> Achard and Guinon,<sup>6</sup> and others have been considered as forming an individual entity denominated "optic neuromyelitis" or "acute neuroptic myelitis." Beck<sup>7</sup> succeeded in accumulating 70 published cases of this syndrome. Anatomical findings were published in 25 of these. More recently Guillain, Alajouanine, Bertrand, and Garcin,<sup>8</sup> Marinesco,<sup>9</sup> Marinesco, Draganesco, Sager, and Grigoresco,<sup>10</sup> and Klaus Merkel<sup>11</sup> have reported cases. Pathological findings in these cases have ranged from slight degeneration confined to the spinal cord and optic systems, to cases in which the involvement of the subcortical white matter was so severe as to involve the question of the possible relationship of the findings to the lesions in Schilder's disease.

The case reported here is of particular interest inasmuch as it occurred in the course of a mental syndrome which in its clinical findings had definitely merited the diagnosis of hebephrenic dementia præcox.

*Case History:* The patient, a 27-year-old unmarried female, was admitted to the Binghamton State Hospital on November 8, 1927, because of an attack of psychomotor hyperactivity in which she had hallucinations, thoughts of death and mentioned suicide although she had never made any active attempts at self-destruction. The

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\*\*The author wishes to express his appreciation to Dr. Wm. C. Garvin, superintendent of Binghamton State Hospital and to Dr. H. S. Gregory, pathologist of the same hospital for their kindness in forwarding the material for this case and in cooperating with regard to the clinical history. He also is indebted to Dr. A. Ferraro, research associate in neuropathology at the Psychiatric Institute, for much helpful criticism in the interpretation of the pathological findings.

family history revealed the father as a ne'er-do-well, refusing to work, and requiring the family to support him. The patient had one younger sister who had a psychosis accompanying an attack of St. Vitus dance. This sister was committed to the Binghamton State Hospital but was discharged after making a good recovery. Aside from this the family history was essentially negative.

The personal history of the patient showed that she had had no serious illnesses. Her occupation was that of shoe factory worker. Her early life had been generally uneventful. She had had a common school education. She was rather socially inclined, especially among girl friends, of whom she had many. She had no male companions except one young man to whom she was supposed to be engaged just prior to the onset of the psychosis. She was reported by friends and members of the family as being irritable, egotistic, and very aggressive towards other members of her family. She evinced little interest in the opposite sex with the exception of her one male friend, although she frequently attended dances. Her family had always considered her as being rather peculiar and inclined to worry over trifles. The onset of the psychosis for which she was admitted seemed to date back to about a year before admission. At that time she had an attack described as homosexual panic for which she was treated by the psychologist at the corporation where she was employed.

The patient apparently never became quite normal again after that attack and about six weeks before admission to the hospital she had a severe attack of psychomotor hyperactivity in which thoughts and mentioning of suicide were prominent as well as hallucinations of various types. Her language became very profane and vile and she showed some rhyming of speech and flight of ideas. This continued until the admission to the hospital.

Mental examination on admission to the hospital revealed in addition to the above findings evidences of a manic reaction. However, there was marked scattering and apparently a deep trend reaction which led to the diagnosis of dementia præcox, hebephrenic type.

Physical examination on admission showed nothing of special interest. The pupils were regular in outline and responded promptly to light and accommodation. All deep and superficial



reflexes were normal. There was no evidence of any deficiency in equilibratory functions and the gait was normal. No abnormal reflexes were present. She seemed in good physical health and showed no neurological abnormalities.

On July 5, 1928, seven months after admission, the pupils were found to still react promptly to light and accommodation. The patellar, triceps, biceps, and supinator reflexes were found to be increased bilaterally. No Babinski or other abnormal reflexes were found.

On August 8, 1928, the patient developed a short attack of bilateral conjunctival hemorrhages which cleared up in a short while.

About one and a half years after admission, on May 10, 1929, the patient began to show some slurring of speech. She became unsteady on her feet showing poor muscular control in her legs and it was difficult to make her understand questions. Her legs showed some spasticity. The mental slowing up continued rapidly and her ataxia became more marked. Spinal fluid examination on August 14, 1929, showed a cell count of 0, globulin slightly increased, gold sol 5544332100, Wassermann negative. Blood Wassermann was also negative.

On September 1, 1929, the patient was seen by an ophthalmologist who made a diagnosis of primary optic atrophy. For the next few months she became very untidy and was noted as drooling at times. She gradually lost control of her lower limbs and was given arsenicals and iodides without any improvement, however. Spinal fluid examination on January 13, 1930, showed a cell count of 1, no increase in globulin, gold sol 0011000000, Wassermann negative. Blood Wassermann was also negative. Neurological examination at this time revealed absence of the knee jerks, the left having disappeared before the right. The plantar reflexes were active, there was no Babinski or ankle clonus, and the elbow reflexes were active. These later disappeared. Ankle jerks were lost. The abdominal reflexes were active on both sides. Pupils were dilated. They reacted to light. Very poor cooperation was obtained from the patient and the neurological examination was not entirely satisfactory. Blood count was normal except for a slight relative lymphocytosis. During the next few months the patient gradually failed, developing

incontinence of urine and feces. She died on July 10, 1930, following a terminal pneumonia.

Post-mortem examination was performed one and a half hours after death and the brain was placed in the fixing solution within 30 minutes after having been removed.

#### GENERAL GROSS AUTOPSY FINDINGS

The heart showed a patent foramen ovale. Both lungs showed lobar pneumonia. Otherwise there was nothing of interest in the general viscera examination. The brain weighed 1240 grams. There was no evidence of gross pathology. The arachnoid was not markedly thickened and was not adherent. No exudate was present. Convolutions appeared well preserved and of normal contour. There was no evidence of any tumor and the only slight malformation was the presence of a small fifth ventricle. The basal vessels appeared normal. The pituitary showed no pathology grossly. The posterior clinoid processes, however, were unusually large but not large enough to cause definite pressure on the gland. The spinal cord appeared normal except for a shrunken appearance in the dorsal thoracic region.

The brain and cord were removed for microscopic study and fixed in 10 per cent neutral formalin (Merck). Blocks of the various brain areas and optic nerves were placed in formol ammonium bromide for study with the Hortega-Penfield and Cajal silver carbonate and gold sublimate methods for glia cells. Blocks of the same areas were also placed in alcohol for Nissl cell study. Paraffin sections from formalin fixed blocks were also used for cell study with the Bielschowsky-Plein stain, for connective tissue study with the Perdrau stain, and for a general study with the H. & E. stain. Sections were also stained by the Loyez method for myelin sheaths. The fettepenceau stain for fat was used for evidence of fatty degeneration. The white matter radiations were studied in addition to these methods with the Weigert stain, the Spielmeyer stain for myelin sheaths, and the Bielschowsky neurofibril stain. Similar studies were made on the mesencephalon, medulla, cerebellum, and spinal cord.





Fig. 1. Section of cervico-thoracic spinal cord, Weigert stain, showing marked degeneration in the dorsal columns and the dorsal and ventral lateral white columns with good preservation of both the crossed and uncrossed pyramidal tracts.



Fig. 2. Section of thoracico-lumbar spinal cord, Weigert stain, showing marked degeneration of dorsal columns with some evidences of degeneration in the dorsal and ventro-lateral white columns with good retention of the integrity of the pyramidal tracts.

## MICROSCOPIC FINDINGS

*Spinal Cord.* Of major importance in the spinal cord is the very marked degeneration of all of the ascending sensory tracts including the dorsal columns and the lateral and antero-lateral ascending fiber tracts. This degeneration extends throughout the whole length of the cord from low in the lumbosacral region up into the nuclear terminations of the various tracts. The long descending tracts, the direct and crossed pyramidal, appear to be well preserved. The degeneration, apparently partly of long standing duration, is well seen with Weigert and Spielmeyer preparations of the cord at different levels. Figs. 1 and 2 show Weigert preparations of the cord in the lower cervical and lower thoracico-lumbar regions showing this marked disappearance of myelin sheaths in the long ascending tracts. The progressive nature of this degenerative phenomenon can be seen from study of similar sections with the fettepenceau stain for fatty products of disintegration. The marked accumulation of large fat globules in the degenerating tracts can be clearly seen. On more careful examination of these regions the fat is seen to bear no particular relationship to the blood vessels and to be contained to a great extent in the numerous large compound granular corpuscles which are present in the degenerating areas. Bielschowsky stain for neurofibrils of the spinal cord shows that the degenerating areas still contain a few normal-appearing axis cylinders. There is no evidence of any inflammatory process in the cord. There is no phenomenon of cellular infiltration and the zones of entrance of the dorsal roots appear to be devoid of inflammatory elements. At the periphery of the degenerated areas a few large hypertrophic astrocytes are seen.

The gray matter also reveals little evidence of inflammatory process. The small blood vessels, however, appear to be, perhaps, increased in number. This increase, however, seems more of a relative type due to the shrinkage which has occurred in the gray matter. The nerve cells in the cord as shown by the H. & E. and Nissl stain appear to have largely disappeared. The few that remain are very poorly stained with swelling and eccentricity of the nucleus and marked paling of the cytoplasmic granules. No evidence of neuroglial proliferation is found.

In the degenerating areas of the long fiber tracts, especially in the dorsal columns, there are a great number of compound granular corpuscles laden with fat. The degenerative phenomenon in the spinal tracts is not a localized one in the sense of small patchy areas but is a general one throughout the whole length of the tracts. It can be followed with Weigert, Spielmeyer and fat stains up through the medulla and midbrain and into the cerebellar and thalamic terminations of the tracts involved. The degenerative phenomena are indeed well seen with fat stain as high as the termination of the spino-cerebellar tract in the vermis of the cerebellum.

In general terms the changes present in the spinal cord would appear to be those involving general progressive degeneration of the long ascending fiber tracts extending throughout their whole length with gradual destruction of the ventral horn cells and shrinkage of the gray matter without any evidence of inflammatory processes. Unfortunately study of the roots was not possible at this time.

*Optic System:* The optic system from the optic nerve up to the occipital cortex shows a very marked pathological process. The optic nerves of both sides in Weigert and Spielmeyer myelin sheath preparations show a rather marked central degeneration with disappearance of the sheaths. Fig. 3 shows this very well. Fat stains of similar sections show the presence of large numbers of bright red fat globules just as were shown in the spinal cord by similar methods. Hortega-Penfield silver carbonate preparations of similar sections show that the degenerated areas contain a large number of compound granular corpuscles. Counter-stain with fat stains reveals that these corpuscles contain a large quantity of fat. The degenerative process extends back through the chiasma into the optic tracts where it is again clearly demonstrable by Weigert, Spielmeyer, and fat methods. In the corpus geniculatum laterale there is considerable atrophy of cells and disappearance of groups of cells as shown by the Nissl method. Interesting phenomena in the optic system are demonstrated by Spielmeyer and Weigert preparations of the occipital portions of the hemispheres. The subcortical white matter in these regions presents a moth-eaten appearance with numerous small areas where myelin sheaths are very poorly, if at all, stained. These degenerating areas seem to bear

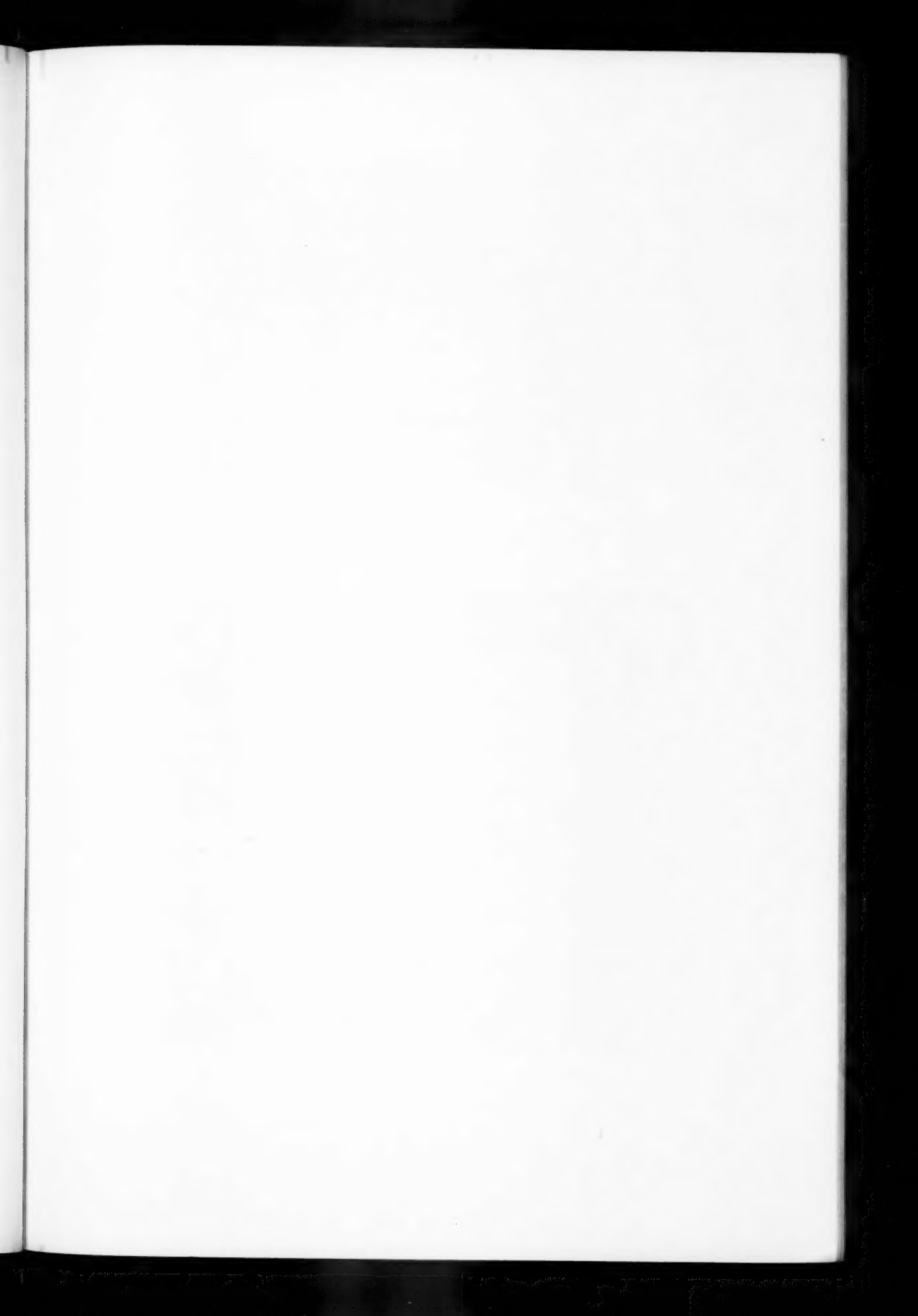






Fig. 3. Section of optic tract, Weigert stain, showing a severe degree of central degeneration

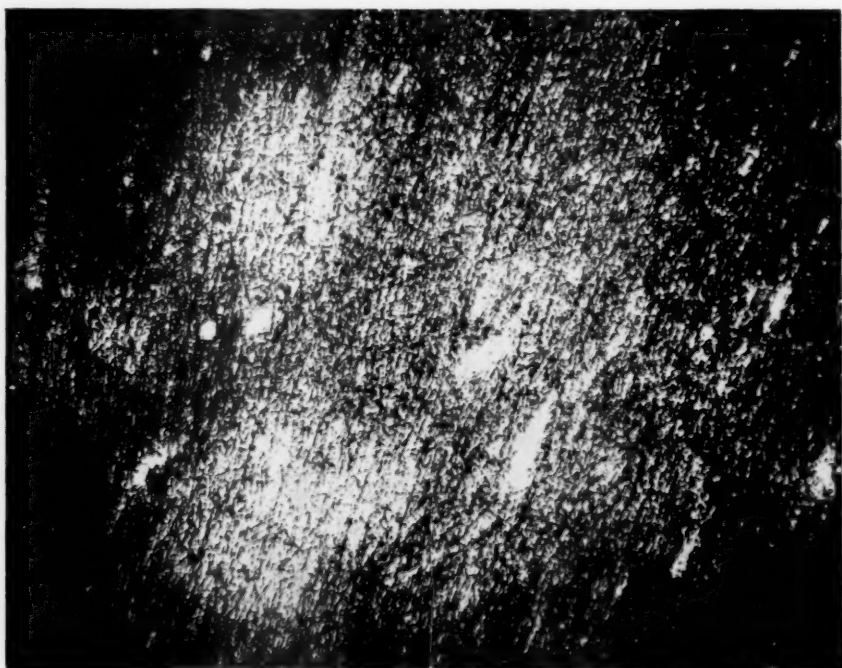


Fig. 4. Section from occipital radiation, Spielmeyer preparation, showing spotty disappearance of the myelin sheaths



a rather close relationship to the small blood vessels. Fig. 4 shows this characteristic appearance in Spielmeyer preparation of a section from the occipital cortex. High power study of these degenerating areas reveals the absence of many myelin sheaths, with swelling, globular formation and fragmentation in the few remaining sheaths. Bielschowsky neurofibril stain reveals disappearance of some of the axis cylinders with good retention of many others, however. Glia proliferation in these areas as revealed by silver and gold preparations is seen to be very slight. Fat stains of these areas fails to reveal the presence of any fat of degeneration. Perdrau preparations reveal a normal connective tissue of the blood vessel walls.

H. & E. sections of the occipital regions reveal an apparent increase in the number of the normally present round cells of the white matter. There is no perivascular infiltration and although the round cells are perhaps more slightly increased surrounding the blood vessels they are seen with specific stain to be neuroglial in type.

The nerve cells of the occipital cortex as studied by Nissl preparations reveal interesting facts. The most striking finding is the presence of a considerable number of areas in which many of the cells have disappeared completely or are very palely stained showing disappearance of most of the Nissl substance as well as the nucleus. Fig. 5 shows a cortical field prepared with the Nissl stain. Areas almost devoid of nerve cells are clearly seen. It is of interest that many of the remaining cells appear perfectly normal. There is little evidence of diffuse degenerative changes and little evidence of any reactive process such as satellitosis or neuronophagia. It would appear that many of the cells had gradually and slowly disappeared. The lamination of the cells in this region appears evidently disturbed.

In summary, concerning the optic system, we may say that it presents bilaterally a general phenomenon of spotty degeneration. This degeneration involves the optic nerve, the optic tract, the corpus geniculatum laterale, the subcortical radiations and, finally, the cortical cells.

## OTHER GENERAL FINDINGS

Although the spotty degeneration of the optic system is rather marked, it is by no means confined to this system alone. Sections from other cortical regions of both sides show similar spotty degeneration in the white matter. In order of intensity it would appear that the parietal region is involved to an extent slightly less than the occipital region and that the temporal region is involved to a less extent than the parietal region. The motor fibers show very slight involvement. This slight spotty degeneration can also be seen, however, in the internal capsule. However, it is very slight as compared to the involvement of the subcortical sensory radiations. The frontal lobe is relatively free. Fig. 6 shows the H. & E. preparation of white substance of the parietal region. General increase in the number of round cells, especially along the walls of the blood vessels, can be seen. These are not inflammatory cells and on specific stain are seen to be neuroglial in type, more specifically oligodendrocytes.

Nissl nerve cell stains of the various cortical regions again reveal the presence of some degeneration in practically every region of the cortex except perhaps the motor cortex where the nerve cells appear to be well retained. In the parietal and temporal regions we again find small areas where nerve cells seem to have completely disappeared. This disappearance seems to involve mainly the larger cells. Some of the remaining cells are very pale. This process is more active again in the parietal lobe than in the temporal lobe although both of these regions are far less involved than the occipital region. The frontal lobe again shows very slight involvement of the nerve cells. The interesting feature in all these regions seems to be the absence of a definite reactive phenomenon in the form of neuronophagia. Fat stains reveal no increase in fat in the cortical cells which remain. There appears to be no increase in the actual number of blood vessels in the cortex.

Globus-Penfield modification of Hortega's stain and Cajal preparations of the various cortical areas reveal, especially in the parietal regions, the presence of rather marked acute swelling of the oligodendroglia. This very probably is not of post-mortem causation inasmuch as the autopsy was performed within one and a half hours after death and the brain was placed in the fixing solution



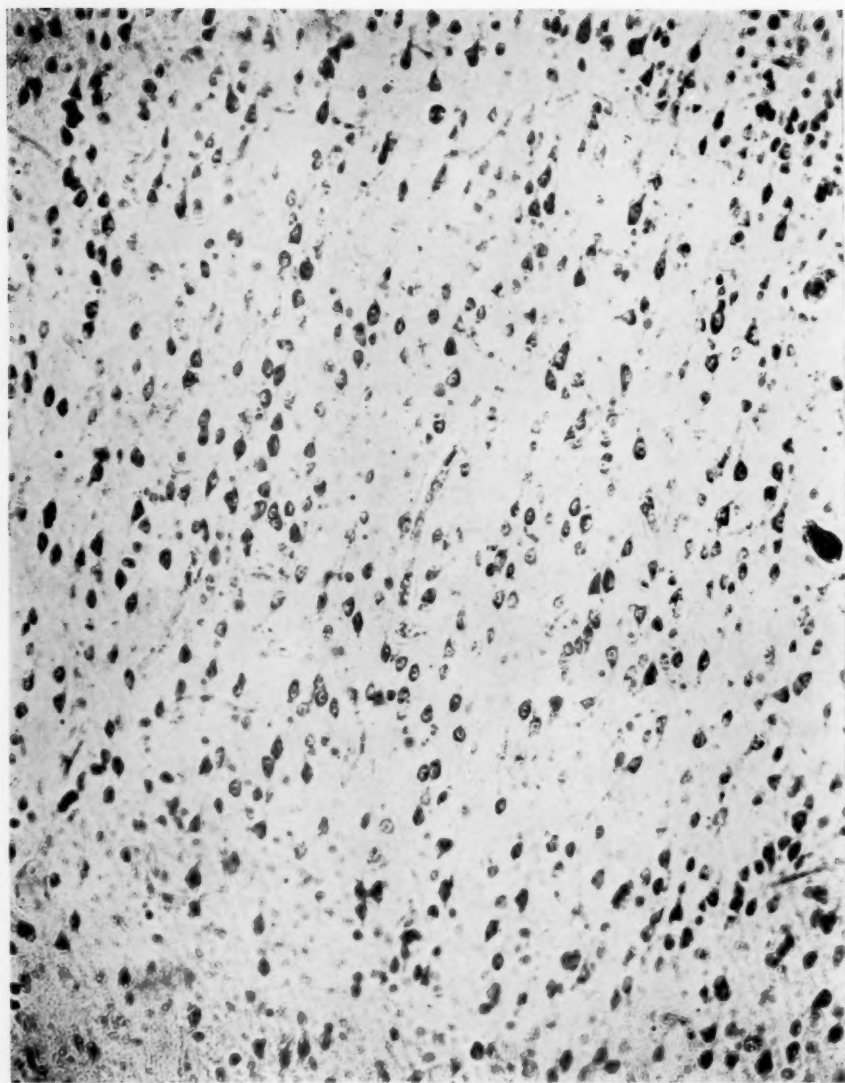


Fig. 5. Section of occipital cortex, Nissl preparation, showing areas of partial and complete disappearance of nerve cells with normal appearance of many of the remaining cells and with no evidence of satellitosis or neuronophagia

within 30 minutes after removal. The microglia show at times very slight hypertrophy with some swelling of the processes. In general, however, the reaction on the part of the microglia seems to be very slight. The reaction of the astrocytes likewise is very slight although in the subcortical radiations these cells at times appear to be slightly hypertrophic with swelling and slight fragmentation of the processes.

Preparations of the various subcortical regions, including the Ammon's horn, the lenticular nucleus, the diencephalon, and the thalamus reveal very slight pathological involvement. There appears to be a considerable increase in pigmentation of some of the cells of the medial nuclei of the thalamus. The lenticular nucleus is essentially normal. Aside from the evidences of degeneration in the vermis the cerebellum is essentially normal.

#### GENERAL SUMMARY OF PATHOLOGICAL FINDINGS

While the brain reveals general changes such as "ausfällen" of cells in the cortex, spotty degeneration of subcortical sensory radiations, and acute swelling of oligodendroglia, the major degenerative processes are confined to the optic system and the spinal cord. Here the picture revealed in the optic nerve, the optic tract, and spinal cord is one of progressive degeneration, rather acute in character, involving in the spinal cord all of the long ascending tracts, and in addition, the ventral horn cells. There is no evidence of any inflammatory response throughout the whole nervous system. The picture is one of a degenerative process.

#### DISCUSSION

The question arises with regard to this case as to its possible position in the large group of sclerosis including the diffuse type, the acute type of multiple sclerosis, the Schilder's disease, and the entity denominated "ophthalmoneuro-myelitis" by Devic.<sup>12</sup> The essential features of the case are the onset of the neurological signs about one and a half year after the onset of mental symptoms, and the pathological finding of a widespread degenerative condition with no inflammatory response on the part of the nervous system and involving to greatest extent the optic system and the long ascending spinal tracts. The general and widespread involvement

of the spinal tracts with absence of any tendency to focal lesions in the cord and its confinement largely to the sensory system would seem to differentiate it from the usual case of acute multiple sclerosis. There is also no evidence in the cord of any inflammatory process.

Despite the fact that the patient's age was greater than the usual run of cases of Schilder's disease and despite the marked spinal involvement, which is unusual for such cases, some process closely allied to the pathology of encephalitis periaxialis diffusa may be considered, at least as far as the cerebral pathology and clinical course are concerned. In these respects this case seems to have some analogies with the three familial cases of Schilder's disease reported by Ferraro<sup>13</sup> in 1927 insofar as the type of the cerebral degenerative process is concerned. The author at that time reviewed the previous pathological findings in this disease and some of this is used in the present discussion. All of the three cases showed incidence during the third decade with mental symptoms and subsequent deterioration with development of diffuse neurological signs. Pathologically they presented diffuse areas of demyelination in the subcortical white matter and diffuse degenerative changes in the optic nerves with spotty involvement in the cord of the pyramidal and cerebellar spinal tracts. These cases showed little, if any, response of the nervous system in the sense of inflammation, although they all showed glial response in the involved areas. There was also some cell destruction in the sensory cortices.

However, the more patchy type of cerebral involvement, the much less marked glial reaction and the more severe spinal degeneration, in the present case confined mainly to the sensory tracts, serve to differentiate it from Ferraro's cases, though the difference may be one of degree rather than of nature.

The present case would seem to differ also from the typical cases of encephalitis periaxialis diffusa reported by Schilder,<sup>14</sup> J. Collier and J. E. Greenfield,<sup>15</sup> Milhalescu and Elekes,<sup>16</sup> Flatau,<sup>17</sup> Brock, Carroll and Stevenson,<sup>18</sup> Kraus and Weil,<sup>19</sup> Foix et al,<sup>20</sup> Barre, Morin, Reys, and Draganesco,<sup>21</sup> and others in the widespread degenerative changes in the the spinal cord. The brain findings with the spotty degenerative changes in the optic systems, symmetrical in distribution, might be considered to resemble each other con-







Fig. 6. Section of parietal radiation, H. & E. preparation, showing increase in the number of round cells in the white matter especially along the vessel wall.  
These cells with silver stain are seen to be oligodendrocytes.

siderably with the difference, perhaps, that the usual Schilder case presents more glial reaction and evidence of cellular infiltration. Krabbe's familial case, however, in 1916,<sup>22</sup> showed absence of inflammatory changes in the brain with a complete absence of formation of new vessels and of infiltration of their sheaths with leucocytes.

The spinal pathology in this case resembles the findings in the cases of so-called "ophthalmo-neuro-myelitis," and when taken in conjunction with the cerebral findings in the present case, tend again to point toward the close ancestry of encephalitis periaxialis diffusa and ophthalmo-neuro-myelitis, as claimed by Marinesco, Draganesco, Sager and Grigoresco.

These authors, after presenting a case of the latter disease with marked spinal degenerative phenomena involving the dorsal columns and ventral horn cells and at times approaching large areas of softening associated with optic nerve atrophy and large areas of degeneration in the occipito-parietal radiations, felt that the case described by them formed a link between the so-called ophthalmo-neuro-myelitides and the encephalitis periaxialis diffusa group. They felt that they constitute two different affections but that they had a certain common parentage. Their case presented, as did the majority of the cases of ophthalmo-neuro-myelitis reported by Genet and Devic, Hillion, Steffan, Achard, Guillain, Alajouanine, Bertrand, and Garcin, Beck, and Merkel, symptoms which primarily pointed to the spinal cord or optic systems. The duration of the cases averaged about five to seven months or less.

The case of Marinesco et al. presented rather severe lesions of the white substance of the centrum ovale leaving intact a rim of the white substance at the border of the gray matter of the occipito-parietal region. The areas of degeneration showed a spongy cavity-like appearance as in Schilder's disease. Histologically the case presented a myelin disintegration with relative conservation of the axis cylinders. There was, in addition, a rather abundant proliferation of the glia and a lymphocytic reaction in the areas of degeneration which was very intense at the borders.

Many of the cases of ophthalmo-neuro-myelitis reported in the literature showed a symptomatology of a monoparesis with disturbance of vision as first symptom. Guillain, Alajouanine, Bertrand,

and Garcia's case also showed flaccid paraplegia with blindness and pseudotetanoloid contractures which resembled short Jacksonian attacks. The progressive condition was accompanied by fever with death occurring in seven months. The spinal fluid showed a slight increase in albumin with negative serology. The histological examination showed an area of destruction in the white and gray substance in the superior dorsal region. There was also a region of demyelination in the hypothalamic region and in addition a zone of myelin disintegration with formation of granular corpuscles in the chiasma. There was likewise a small necrotic lesion in the optic tract. The authors felt that their case belonged to the neuro-optical myelitis group. There was, however, no evidence of any infiltrative perivascular response nor of any meningeal reaction and the authors felt that a toxic rather than an inflammatory origin of the condition was probable.

The cases described by Devic usually showed predominantly involvement of the spinal cord and of the optic nerve. Beck's review of 25 cases with autopsy findings showed in general a diffuse myelitis in which there were many disseminated lesions in the white substance usually of an intense necrotic character accompanied by a rather intense perivascular inflammatory reaction. In general, there was a rather marked perivascular infiltration of round cells and polymorphonuclear elements. Beck's case, it may be noted, showed a Lange curve resembling an encephalitic curve at first but later becoming normal. This, it will be remembered, resembles the findings in the present case when the first spinal fluid was found to be typically paretic in type and subsequent re-examination showed a normal curve.

Of course, the majority of the cases described as ophthalmoneuro-myelitis do not present such intense destructive lesions as the cases of Beck, Guillain, Marinesco et al. Bouchut and Dechaume<sup>23</sup> described a case showing paraplegia with blindness and a marked polynucleosis of the spinal fluid showing pathologically necrotic areas in the spinal cord and also in the white substance of the brain but manifesting rather marked inflammatory changes including perivascular infiltrations with lymphocytes, plasma cells, and polynuclears. Infiltration occurred not only in the brain stem, but also in the peripheral nerves and muscles showing a septineuritis, ac-

according to Nicolau's expression. Bouchut and Dechaume felt that their case, though describable as neuro-optic-myelitis, was related to epidemic encephalitis and that, therefore, the existence of ophthalmo-neuro-myelitis as a separate entity was doubtful. Guillain, Alajouanine, Bertrand, and Garcin felt that this identification was not justified.

Merkel recently reported a case of so-called optic neuro-myelitis which had clinically been diagnosed as multiple sclerosis. Pathologically the nervous system showed essentially involvement of the spinal cord and optic nerve. The cortex, basal ganglia, cerebellum, pons, and medulla were reported as normal in all respects. The spinal lesions were confined to the cervical and dorsal cord involving essentially the posterior columns. The lesions were discreet and of different size usually involving only a few myelin sheaths. The lesions did not seem to have any particular relationship to the blood vessels. There was only occasional swelling of the ventral horn cells. There was involvement of the spinal nerves with some infiltration of plasma cells and lymphocytes. The optic nerve also showed some spotty degenerative phenomena. Merkel felt that the infiltrated cells in the adventitial lymph spaces were rather the result of the degenerative process in the spinal cord. He felt that some sort of toxic condition might be at the basis of the pathological picture.

The case here described is seen to differ from the usual case reported as ophthalmo-neuro-myelitis by the much less severity of its cerebral involvement and by the absence of any inflammatory response. It does not show the same destructive cerebral involvement or the lymphocytic reaction of the case of Marinesco et al. It lacks the large area of destruction in the superior dorsal region and the hypothalamic lesion of the case of Guillain, Alajouanine, Bertrand, and Garcin and it shows a more diffuse spinal involvement. The two cases are similar, however, in the absence of any infiltrative perivascular response. Beck's reviewed cases in general showed a rather marked perivascular inflammatory reaction, thus differing from the present case. Merkel's case differs from the present one in that there was no cerebral pathology in his case and the spinal involvement was confined to the cervical and dorsal cord and mainly to the dorsal columns, while Bouchut and

Dechaume's case differs by the presence of a marked inflammatory component.

In general, most of the reported cases of ophthalmo-neuro-myelitis presented some sort of paraplegia associated with blindness and some involvement of the other cranial nerves. After a variable time some of these patients presented a clinical picture of multiple sclerosis. Devic felt that paraplegia with blindness was diagnostic of the disease of ophthalmo-neuro-myelitis. It will be noted that the case presented here differs considerably from the usual ophthalmo-neuro-myelitis cases in that the inflammatory element is practically absent. At one stage it would seem that differential diagnosis clinically between certain advanced cases of acute multiple sclerosis and ophthalmo-neuro-myelitis would be impossible. Marinesco et al. feel that the colloidal benzoin reaction may be of some importance because it is negative in ophthalmo-neuro-myelitis. Beck felt that clinically the diagnosis of ophthalmo-neuro-myelitis should be confined to those cases which present at the terminal stage a paraplegia with blindness.

We may mention briefly the possibility of this case being one of the general group of encephalo-myelitides. It is known that some of these cases present evidence of considerable inflammation, whereas, some may present practically no inflammatory evidence but only that of progressive degeneration.

The resemblance to Krabbe's case and to cases of the Pelizaus-Merzbacher's disease may be noted. However, the last is usually a familial infection beginning in infancy but rapidly progressive. Krabbe likewise described cases with destruction of the medullary sheaths and axis cylinders throughout the white substance and the cerebellum with complete degeneration of the white matter of the cerebellum and degeneration of the spinal nerve tracts. The vessel sheaths showed fatty granular cell infiltration. The cases, however, were familial in type and infantile in onset.

In general summary it would appear from the common and dissimilar elements in the present case and the various cases of diffuse sclerosis, encephalomyelitis, ophthalmo-neuro-myelitis, Schilder's disease, the Pelizaus-Merzbacher's disease, and cases of the type that Krabbe reported, that we may be concerned with a large group of cases, possibly toxic or infectious in origin, but the



clinical picture of which is determined by many elements such as some other predisposing condition in the patient at the time of onset or the age of the patient and that the pathological picture may depend to a great extent upon the particular severity of the involvement and the stage at which the case is examined pathologically. It might thus vary very markedly from case to case. The case presented here would seem to speak highly for the common relationship of so-called ophthalmo-neuro-myelitis of Marinesco et al. and the diffuse sclerosis of Schilder and others, because it presents rather marked involvement of the brain and at the same time severe characteristic progressive involvement of the spinal cord. The findings in the nervous system are consistent with the presence of a rather marked toxic process as Merkel claims. There is no evidence of an infectious process in the usual sense of the word. It would seem to present a case combining many of the elements common to all of this heterogeneous group of cases and it would seem that sharp demarcation of cases of this type into definite disease entities may not be ultimately justified from a pathological point of view.

Although early mental changes have frequently been reported in cases of Schilder's disease, the occurrence of mental changes of a severe type as the initial symptom in cases of ophthalmo-neuro-myelitis has only rarely been reported. The finding, therefore, in the case described here of a marked mental symptomatology of 18 months' duration before the onset of any physical manifestation is a rather rare and unique finding so far as cases of ophthalmo-neuro-myelitis are concerned.

The interesting question of whether the mental symptomatology which preceded by almost two years the neurological symptomatology was directly associated with early toxic encephalopathy or whether the neurological symptomatology and pathological processes were incidental concomitant occurrences cannot be solved with certainty. The pre-existing personality of the patient, her heredity, and her initial psychological symptomatology do not justify us in ascribing a psychogenic origin to her disease, whereas, I feel that the pathological findings involving the occipital, parietal, and temporal lobes might easily be consistent with the hyperactive manifestations with hallucinations of the early mental syndrome

and the dull hebephrenic type of manifestation in the later picture. The probable irritative phase in the early pathological process might easily be responsible for the hallucinatory element and the destructive process of the later date might easily account for the marked deterioration and the apparent mental isolation as many sources of sensation had been destroyed by the pathological process. It would seem that the onset of the mental picture here might easily be consistent with the early stages of a general neurotoxic process which in its early stages involved the brain and secondarily in the terminal stages spread to involve the spinal cord.

#### SUMMARY

1. A case of a 27-year-old female is presented. The patient, after 18 months in a State hospital for mental diseases, with a mental picture of a typical hebephrenic-dementia-præcox type, developed signs of diffuse involvement of the spinal cord and optic systems with marked and rapid mental deterioration.

2. The most outstanding pathological findings were diffuse degeneration of the long ascending tracts of the spinal cord and spotty involvement of the optic system, including the optic nerve, optic tract, optic radiation, and occipital cortex, and also of the other sensory portions of the hemispheres. There was little, if any, evidence of a reactive condition on the part of the brain in the sense of inflammation, the picture being one of progressive degeneration.

3. The case is presented as an intermediate type in the large diverse group of diffuse sclerosis, Schilder's disease, acute multiple sclerosis, encephalo-myelitides, and ophthalmo-neuro-myelitides.

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## BILATERAL SUPRARENAL HEMORRHAGE AS A CAUSE OF SUDDEN DEATH IN EPILEPSY

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Bilateral suprarenal hemorrhage in the adult occurs so infrequently that the report of the following cases is warranted. In 2,075 autopsies on epileptics performed at the Craig Colony, the condition has twice been observed. In 1907 Munson<sup>1</sup> reported the other case. In view of the fact that Pearl and Brunn<sup>2</sup> in 1928, after an exhaustive search of the literature of the past 20 years, could find only 20 reported cases, it would appear that epileptics are possibly more prone to this extensive type of suprarenal hemorrhage than non-epileptics. With this in mind I have carefully reviewed the available histories of the cases reported to date. There was a definite history of epilepsy in three, i. e., Ogle,<sup>3</sup> Armand,<sup>4</sup> Munson.<sup>1</sup> There may possibly have been more as in most reports only the post mortem findings were given and not the previous personal history. However, even this comparatively high percentage is sufficient to place epilepsy as one of the predisposing causes of this unusual condition. In fact, Lavenson<sup>5</sup> in 1908 stated that the condition often resulted from phenomenon tending to increase the blood pressure and that the convulsions so often noted in these cases might be the cause rather than the result of the hemorrhage. F. Armand<sup>4</sup> in speaking of the etiology gives among nine other factors, the following: "In both acute and chronic lung and cardiac diseases, and in convulsions; in fact, any disease which is known to produce stagnation of the blood in the veins or a marked increase of blood pressure may be associated with adrenal hemorrhage."

### CASE HISTORY

No. 3887. F. G. Male, white, single, admitted to Craig Colony, October, 1913. Died January 6, 1932.

Father was alcoholic and feeble-minded. Mother was feeble-minded, died at 21 years, after childbirth. Maternal grandmother was epileptic. A paternal aunt was a sex offender.

Patient was of normal birth, and was artificially fed. He had whooping cough at the age of five years, measles at an unknown



Plate 1. Kidneys and suprarenal glands before section

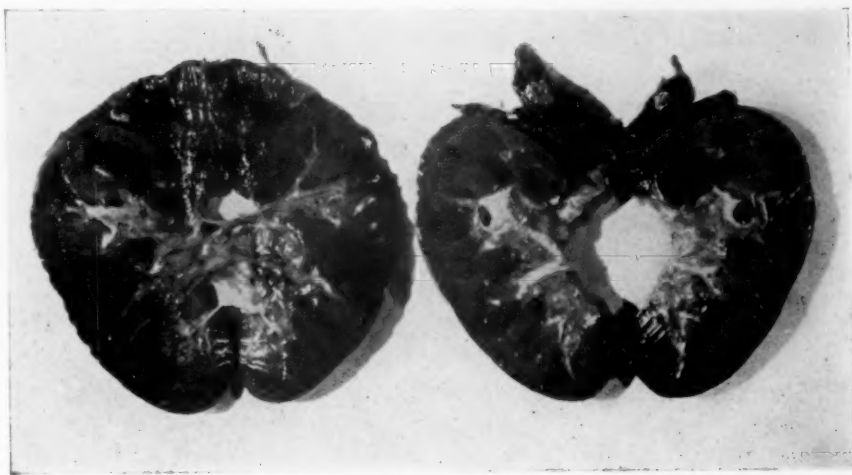


Plate 2. Section view of kidneys and suprarenal glands





age and chorea at the age of six years. At age of eight years he had a fall from a high wall and suffered internal injuries, the exact extent of which, or the symptoms presented at the time, are unknown.

Exact age at onset of epilepsy is unknown. Suffered from two to three attacks of grand mal per week. He had a warning, would cry out, feel dizzy, and complain that his head hurt him prior to the attacks. He was very automatic after attacks and wandered about in a dazed way and would disrobe himself if let alone.

He was well nourished and well developed. He had no gross physical deformities other than undescended testicles. This condition was corrected by operative interference soon after admission, but the testicles both remained small and underdeveloped even after the onset of puberty. This fact is of interest as suggestive of a gonadal-adrenal syndrome. Neurological examination was negative. Wassermann test was also negative. Mentally he was definitely feeble-minded and he deteriorated to quite an extent during his 19 years' residence in the institution.

In 1917 he had bronchopneumonia; adenoids and tonsils were removed and he was circumcised in 1918. He had uncomplicated influenza the same year. He fractured the left clavicle in a fall during a seizure in 1923.

Luminal therapy was of no benefit in reducing his seizures in 1925.

*History of last illness.* At 3 p. m. on January 5, he complained of cramp-like pains in the abdomen and diarrhoea and was placed in bed. T. P. R. normal. The next morning at 7:30 he arose and walked to the dining room but collapsed when near the door. Examination showed signs of shock such as pallor, shallow respirations, and feeble pulse. In spite of various stimulants, the pulse continued to fade until it was no longer palpable at the wrist. At 10:00 a. m. he was pulseless and temperature had dropped to 95.6° F. He never regained consciousness and died at 12:15 p. m.

*Autopsy.* Performed on January 7, by order of the coroner. Brain showed no gross pathology with the exception that the left Ammon's horn seemed somewhat sclerosed and firmer than the right. The lungs were moderately edematous. Heart normal. On opening the abdomen several ounces of clear yellowish fluid es-

aped. The peritoneum throughout appeared swollen and edematous. There was marked edema in the retroperitoneal tissues. The stomach and large intestines were dilated. Liver and spleen passively congested. The kidneys and suprarenals were removed en masse. Both suprarenal bodies were found to be the site of extensive hemorrhages. They appeared as large blood clots capping the superior pole of each kidney. On section the hemorrhage was found to be confined to the suprarenals themselves. Plate 1 shows kidneys and suprarenals before and Plate 2 after section. Histologically, the normal cellular relationships were completely destroyed and largely replaced by extravasated red blood cells. This was especially true of the medulla and the cortex only slightly less so. The capsule and pericapsular tissue also showed marked red cell infiltration and in numerous places the capsule was completely separated from the gland by masses of free blood. The larger veins showed thrombosis. The lesions were of equal severity in both glands.

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## TRANSFUSIONS IN THE TREATMENT OF MALARIA\*

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Probably in no field of psychiatric practice are the results of treatment more satisfactory than in the proper management of neurosyphilis by the application of means to produce pyrexia and the administration of anti-syphilitic drugs. Doubtless, at the present time, the most potent means of combating the disease is inoculation to produce malaria.

It has been the opportunity of the writer to inoculate 490 patients with the plasmodium vivax during a period of about four and a half years. This number represents all neuro-syphilitics admitted to the Central Islip State Hospital during the period who were good physical risks and for whom permission of the nearest relatives could be obtained.

It seemed that if a satisfactory way of curing malaria, other than by the use of large doses of quinine, could be found, this treatment might be extended to many paretics to whom it is now forbidden because of contra-indications to the use of quinine, e. g., middle-ear disease and nephritis.

Having come across many, notably negroes, who whether because of natural or acquired immunity or for some other reason could not be successfully inoculated with the plasmodium vivax, it seemed reasonable to investigate and determine whether the blood of these individuals might be of use in curing the chills and fever of patients after sufficient paroxysms had been produced. In the literature, reports were not found to show that anyone had ever tried to cure malaria by this means and in March, 1930, the experiment here described was undertaken.

Nineteen patients have been treated by 34 transfusions, permission having been obtained from relatives of donors and donees. The diagnosis of malaria had in each case been confirmed by finding the plasmodium in the blood. Usually, pure blood was transfused but occasionally citrated blood was employed. The blood of donors and donees was matched prior to the transfusions which were made at various times of day in relation to the chills. Some were given before, others during and still others one, two or more

\* The investigations covered in this communication were carried out at the Central Islip State Hospital.

hours after the chills. From no donor could a history of malaria be obtained and physical examinations did not show signs, such as enlarged spleen, that they had ever had the disease. All of them presumably had in their plasma properties which were unfavorable to the development of malaria parasites since each had been unsuccessfully inoculated three or more times from individuals who had on the exact date of the inoculation successfully contributed the plasmodium to other patients. Subsequent to transfusion only three showed any change in severity of the chills and these were apparently attempting spontaneous cure uninfluenced by the injected blood.

F. C., inoculated in March, 1930, experienced 13 chills; following the last one he was given a small quantity of citrated blood from N. P. No chills were experienced thereafter up to April 29, when quinine was started. Meanwhile, however, his blood was examined every other day and found to contain the parasites.

D. L., inoculated in August, 1930, had 3 chills, after which he received a small transfusion from N. P. On the same day he had a chill with a temperature of 107° F, immediately after which quinine was started.

G. M., inoculated August 20, 1930, had 16 chills and on September 12 was transfused with citrated blood from N. P. On the following day he had a chill and a temperature of 105° F, and on September 14 received more citrated blood from the same donor. He had no chill or elevation of temperature thereafter up to December 17. Meanwhile three successively negative smears could not be obtained.

E. D., inoculated August 29, 1930, had nine chills up to September 17, 1930, when he was given citrated blood from N. P. Chills and fever were uninfluenced up to September 23 when more blood was transfused from N. P. She had no chills thereafter until October 14 when there was an elevation of temperature and a typical malarial paroxysm. Two days later another paroxysm occurred and more blood was, without effect, administered from the same donor. Six days later still another dose was administered. Temperature remained normal until December 15 when she experienced a chill with fever of 103° F and was started on quinine.

N. G., inoculated July 10, 1930, had 10 chills. The course or in-

tensity of malaria was not changed by transfusions from N. P., on three successive days three hours before chilling time.

Of the remaining 14 patients all, excepting one, were given transfusions of at least 500 c.c. of blood either as a single dose or divided, and in no case was there any apparent result. One after experiencing nine chills was given 80 c.c. of blood daily for five days. One of the transfusions was given during a chill, the others between or immediately preceding chills. Another patient was transfused twice with 500 c.c. of blood from different donors.

It would be unreasonable to suppose that the blood of N. P. influenced the course of malaria in the three patients whose temperature lessened or subsided following one or more transfusions. From not even one of the 19 patients transfused from him and other donors was it possible to get three successive smears on alternate days negative for the plasmodium. It is probable that the first, third and fourth patients, above referred to, were developing immunity and it is apparent that the contributed blood had nothing to do with the results observed since we often see chills spontaneously stop and temperature remain normal for various periods.

It was decided to determine the effect of pre-inoculation transfusions and on November 7 two patients, M. O'B. and P. C., were each given 200 c.c. of blood from J. P. One of these was inoculated three hours later, the other five hours later. Both of them came down with chills and fever and parasites were found in the blood. The last named, after he had had four chills with temperature of 104 to 107° F, received 320 c.c. of blood by each of two transfusions on two successive days. For a number of days he continued to have chills and temperature of 104° or more until quinine was started seven days after the last transfusion.

Assuming that natural or acquired immunity to malaria does exist, it is probable that the serum of some individuals has more anti-malarial properties than others. Judging from the results of this experiment, it would appear that blood transferred in permissible amounts from an individual who cannot be successfully inoculated with the malaria plasmodium does not cure the malaria of the recipient and that it cannot be used as a prophylactic measure. Certainly the transfusions were ineffective.



## A REPORT ON THE TYPES OF CASES REFERRED TO THE CHILD GUIDANCE CLINICS OF CENTRAL ISLIP STATE HOSPITAL

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This report takes up some of the different classes of cases seen at the Central Islip child guidance clinics held in towns on Long Island. It will give some idea of the material available and therefore of the nature of the indicated therapy.

The largest group of all comprised those mental defectives who required merely proper placement in school, school exemption or institutionalization. In a few of the cases there was associated with the mental defect a physical defect, such as, infantile paralysis, cerebral spastic paralysis, cerebellar syndrome, glandular dyscrasia, etc. Such cases required also reference to the proper consultants, orthopedic, neurological, etc.

One reason for attendance of these children at the clinic was poor school work. As complete a school record as possible was obtained, the parents were interviewed and the children thoroughly examined. It was attempted to determine, particularly on the basis of the mental age, the work the child was capable of performing, the approximate grade he was suited for, and to prognosticate the level to which the child would be able to reach. Recommendations were communicated to the school authorities. In some cases exemption from school was necessary. In all cases the situation was fully explained to the parents and they were advised regarding training. The children were encouraged to cooperate. Many a child referred to the clinic because of poor school work or repeated failure in school, had nevertheless, already satisfactorily solved his situation himself. The following case is typical.

*Paul S.* Chronological age, 14 years. Mental age 9 years, 4 months. I. Q., 65. Started school at 7, poor school work, repeated failure, now in fourth grade, adapts well, no behavior difficulties.

At the clinic he was alert, eager, attentive, spoke readily and with considerable enthusiasm, about his interests and ambitions. He said he was happy, particularly after school when he tinkered with his bicycle or with automobile engines. He has learned to drive a car and spends most of his spare time helping a garage mechanic. He has an ambition to become a garage mechanic.



This boy is making an excellent adjustment in spite of his defect. Fortunately for him he has found a useful, profitable activity which he is capable of performing and which enables him to feel satisfied, confident and happy.

*Frank S.* C. A. 11 years, 4 months. M. A. 6 years, 8 months. I. Q. 59. Third grade.

Unable to grasp any of work taught in school. Does handwork well and seems to enjoy it. Does not mingle well with other children. In class, just sits and stares. When called upon to answer, merely smiles.

This report from the school suggests a valuable approach toward a good adjustment in the hint, "Does handwork well and seems to enjoy it."

It is quite important to search out and encourage such interests, success in which will help to make up for the failure in school work. Special classes are often of tremendous help in furthering this aim but unfortunately these did not exist in the schools of the clinic district.

Although the group of children referred on account of poor school work is largest in number, yet it involves by far the least expenditure of time. This will be shown later in the discussion of the other groups of cases.

In the next smaller group we have mental defectives, borderline cases and dull-normal children who are maladjusted and hence present more difficult problems. The group is of great importance because from it delinquency may be recruited. Some of the difficulties in this group result directly from their lack of judgment and of moral standards. Many of the maladjustments are in the nature of compensatory mechanisms to overcome inferiority feelings.

*John H.* C. A. 13 years, 3 months. M. A. 11 years, 6 months. I. Q. 87. Fifth grade.

Retardation and problem case, causes trouble to teachers and pupils; is sullen; either cannot or will not follow directions in school; teaches younger children to pilfer; bullies smaller children; annoys other children in school; is a poor sport in games; plays a great deal with smaller children; seems to like to be looked up to by them, and is not so much at ease with those of his own age.

School history: Entered school at 5, in first grade two years, in second grade three years, in third grade two years, in fourth grade one year.

Both his parents are intelligent, well-to-do, and social prominent. The

mother resents questioning, thinks the fault lies with the teacher. A sister, a high school graduate, is now married. A brother is in college.

Interpretation is not difficult. School work is difficult for him because of his low mental age. His annoying tactics are used to attract attention to himself. He is grasping at straws to keep him from sinking in utter failure, from losing all respect and confidence in himself. His behavior represents a justifiable protest on his part, although this protest is assuming a most pernicious form. Instead of being given tasks he is capable of performing and so training him in success, he is systematically being trained in failure. This results from a lack of understanding of his case. His teachers did not realize his defect; his mother's pride would not permit her to accept the facts. She constantly compared him to the brother in college and was disappointed at his inability to measure up to the high family standard. The attitude toward him is best expressed in the mother's own words: "He'll finish public school if it takes him until he is 21." Unfortunately a remark of this type from a parent in such a case is as frequent as a refrain. Is it any wonder the boy protests? He is goaded into rebellion, into delinquency, and into criminality. Often the only position left for him is school clown, bully or even worse.

In contrast to this case I can recall the boy, failing repeatedly in school, who came to the clinic so happy and proud that he could hardly contain himself. He had brought for me a small bird's house which he had constructed with the help and through the encouragement of his father.

*Jennie S.* C. A. 14 years, 7 months. M. A. 9 years, 4 months. I. Q. 64. Seventh grade.

Ran away from home twice in December, 1931. Found living with a sailor in New York. Contracted gonorrhea for which she is now receiving treatment. Never troublesome in school, silly, easily led. Believed that she was led into her misconduct by a friend who persuaded her to accompany her to New York.

At the interview she was pleasant and frank, saying: "I guess it's better to tell the truth." Her misconduct did not seem to have produced any mental conflict. During the intelligence test she was noted as being markedly defective in judgment and reasoning. In this case the protest mechanism is not seen.

The formulation here is based directly on her defect, her lack

of judgment. It is in such cases that proper training and supervision are most important.

*Stephen H.* C. A. 13 years, 9 months. M. A. 9 years, 6 months. I. Q. 69. Seventh grade.

He was expelled from parochial school for insubordination and truancy; presents the same problems in public school; is a general disturber. He lies and steals money; was arrested for stealing bicycles and placed on probation. Laughed and boasted in court while other members of family were all overcome by fear and shame. At the clinic he frankly admitted his delinquencies, over which he showed not the slightest concern. He seemed to be entirely lacking in moral sense, a confirmed sociopath.

Although mental deficiency and lack of proper training and supervision at home are important factors there are undoubtedly other factors which cannot be satisfactorily determined in this case without a more careful study.

Defective children may have problems not directly referable to their defect. Such cases belong to the next group. In this group nothing in particular need be said about the technique of approach. Its aim is to make the child's situation, his handicap and limitations understood by those with whom he comes in contact, in general, the teacher and the parents, to provide supervision and training to prevent delinquency and to make possible some attainment of success for the child to prevent compensatory mechanisms expressed in anti-social behavior or adverse personality developments. These cases naturally require more time than those of the former group. Success will depend upon the cooperation obtained from school and home and part of the work in this group has to do with education of teachers and principals independent of particular cases. Eventually, I suppose, contact will be made with courts and other organizations handling the delinquent.

In the next group we come to a very heterogeneous collection of cases that cannot be classified under one heading. As a rule there is no diagnosis we can affix to each case. No satisfactory diagnostic classification has been developed as yet in this field. We may find a behavior disorder or a personality disorder and this may be exhibited by a child with a low I. Q. However, in this group the difficulty would have no direct reference to the mental defect. On the other hand a child may be referred to the clinic because of

poor school work or even repeated failure and on examination be found to have an I. Q. from 90 to 110. One must guard against assuming the presence of low I. Q. as the sole explanation for poor school work. Sometimes a simple explanation might be discovered, e. g., poor eyesight which has gone unrecognized. However, as a rule, such a case presents a difficult problem and calls for a thorough investigation.

This group demands by far the greatest expenditure of time and calls for the greatest skill and preparation. It is a most important group because satisfactory work will reclaim from it worth while children, those perhaps of exceptional ability who may be very productive and useful citizens and also because it will be through operation in this field that we will gain our knowledge of mental development and disease.

*Elizabeth T. C. A. 8 years, 3 months. M. A. 7 years, 10 months. I. Q. 95*  
Third grade.

This girl has been nervous during last few months, especially in class. She is always in mischief, is poor in school work and will not pass her grade. Mother has noticed her masturbating several times in the last few months.

It is rumored in the neighborhood that the child is illegitimate. The mother is 26, thin, undernourished, suspicious, paranoid in her attitude toward school teachers, doctor and neighbors. The father is 44, tired, nervous, loses patience easily. The mother and child (the only one) sleep together in one bed. The father sleeps in a separate bed in the same room.

The girl admitted having masturbated for two years, a practice to which she has reacted by strong fear reaction. Thunderstorms have almost prostrated her with terror, thunder to her being a threat from God to punish her for her masturbation. She has frequent night terrors and vivid dreams.

It is frequently observed that considerable tenseness, anxiety, sleeplessness, nightmares, etc., may be alleviated by frank discussion of sex. Imparting of sex information should not be delegated by the physician to others, even parents, unless it is sure that they will be frank, natural and without embarrassment. It is quite common to find difficulties pertaining to sex and the physician must be prepared to handle these problems himself. It is not usually fair or wise to tell the parent or town nurse or teacher to impart the sex knowledge. The mere fact that the problem exists in the child is some indication that he has been unable to find a natural attitude toward it in those around him. It has been my experience that

children will talk simply and frankly about sex when they meet with the same attitude in the examiner.

In this particular case it is just as important to treat the parents as it is to treat the child, the nervous state in the child reflecting the nervous states of the mother and father. It is a rule (that will be illustrated by the cases cited in this group) that treatment be not alone directed toward the child but also toward the parents. The ratio of importance varies in different cases. In some the child needs practically no attention, the treatment being directed almost entirely to the parent. In others the treatment must essentially aim at the child. It is commonly found in this group that the child's problem is a reaction to the parent's problem.

*George P. C. A. 8 years, 4 months. M. A. 7 years, 10 months. I. Q. 94. Second grade.*

He is problem in school, being constantly in disorder as a result of lack of self-control. His lack of concentration is most pronounced. He entered school at seven years and was promoted to second grade this year on mother's wish. He cannot do the work; is equally poor in every subject. He is not interested in any play with other children but wanders about yard alone, laughing to himself, for no apparent reason.

At the psychometric test he was noted as being shy and "dreamy." He impressed the physician also as being "dreamy." His lack of interest in school and poor work is accounted for by the extensive phantasies he indulged in during school hours. These had to do principally with a two-year-old girl cousin, Matilda, with whom he spent all his play time after school and by whom he was dominated. The games they played were father-mother games, in which they would make beds and lie down and hug. Very vividly the boy described how (in his imagination) a knock would be heard at the window, a bird would appear bearing a baby, stork fashion.

Both his parents were intelligent. The mother blamed the teacher for all of George's difficulties and insisted that her handling of George had been entirely normal and further that he gave evidence of no abnormalities. George was her only child but living with them was the cousin Matilda (10) already spoken of and four younger girl cousins and a four-year-old boy cousin, all of whom played minor roles in the children's playlife.

This boy, at 8, already shows evidence of developing a shut-in, autistic personality. He is rapidly leaving reality via phantasy constructions, a pre-psychotic personality, perhaps.

The mother's life history is of considerable significance. Both her par-



ents were Jewish. Her father died when she was two weeks old, she being the only child of that union. Five years later her mother married a Catholic, and bore 12 more children. George's mother was a veritable outcast in the family, isolated by religion and jealousy. She was a drudge who could only yearn for love and emancipation. In her training of George she clearly reveals her own yearnings left unsatisfied during her childhood. She admitted finally her over-solicitude, over-protection, pampering of George. "I wanted him to have everything I didn't," but she was going too far. When George would not play with boys because "boys were too rough," he was merely rationalizing his mother's wishes for his behavior. "He always hangs on to me. They call him mama's baby. I don't want it," but she could not hide the truth so easily. She did want it.

Here the approach is certainly complex and difficult enough and must be directed toward the mother, Matilda and George.

*Charles D.* C. A. 8 years, 10 months. M. A. 8 years. I. Q. 90. Second grade.

He is nervous and inattentive in school, was normal and played well with other children till about the age of 5, when he developed destructive tendencies.

At 4 he went to kindergarten for two months. At 5 he was in first grade for two months, but played truant and had to be removed. His schooling was always unsatisfactory. He would take things from other pupils and from the teacher's desk and hide them on his person. He spent his seventh year in the Psychiatric Institute where it was attempted, quite unsuccessfully, to continue his schooling. This year he started the third grade but had to be demoted to the second grade because of unsatisfactory work. One teacher reported: "He took cookies from one of the girl's lunch boxes. He does work only when praised or if he thinks he will be punished. When he does work it is as good as that of the average pupil."

At the clinic he was under increased tension, overactive, could not sit quietly, would not pay attention, could not be engaged in conversation, was distractible, toyed with and tried to take apart the stethoscope and other instruments and articles on the desk. He would jump up and down, get up from the chair, run around the room, look at some object and ask, "What's this?" and immediately attempt to manipulate it. When he was forced to remain in the chair and questioning became persistent, he whined, turned his face away, called for his mother and ran out of the examining room.

Such behavior would easily account for his inability to progress in school in spite of his normal intelligence.



In the following story which was slowly pieced together, lies much of the interpretation and formulation.

He was apparently normal until about 5 when the second child, another boy, was born. In the circumstances attending Herbert's birth lies the key to the problem. Even before his birth it was possible to see that the arrival of another child, brother or sister, had considerable importance for Charles. After he was told of the impending arrival he could never quite get it out of his mind. He was apt to tell everyone he knew all about it. "He was going to get a brother who was going to be very nice and he, Charles, was going to take care of him."

The first child sometimes reacts to the next by jealousy or fear, and strives to retain his dominant position, to keep his mother's love for himself. In Charles' case, if he had any dark fears before Herbie's birth, they were quickly realized after the birth. Unfortunately at that time, Charles had a bad cold. Recovering from that he got a bad attack of poison ivy. On all his attempts to get near the baby he was naturally kept away, although there probably did not seem anything natural to Charles about this. No explanation was given to him. Whenever he edged near Herbie he was slapped. That was all there was to it. Very dark thoughts began shaping themselves in Charles' mind, so dark that he tried to run away from them. He became nervous, twitchy, restless, just as though his dark thoughts were becoming audible, driving him to fearful frenzy. Toward Herbie he made no effort to hide his terrific feeling of jealousy and his appetite for vengeance was insatiable. When Herbie was a few months old Charles lifted him from his carriage and deliberately dropped him to the floor. The doctor was quickly called for Herbert who was sick for some time afterward and who had been retarded ever since. Charles was severely punished by his father. From that time on Charles was at war with his family. The father repeatedly whipped him. The mother clearly showed her partiality for Herbert. Whenever some particular mark of affection was given Herbert, Charles would soon scratch him or attempt some more vicious act. Charles' behavior became very erratic. He stole things, played truant from school, took a pistol from a man's car, fired it and slightly injured his foot, let all the kerosene run out of a large kerosene drum. He applied himself poorly to school work, became very destructive, would tear and mangle anything he could put his hands on, slept poorly, wet his bed, threatened to run away from home, etc. In his destructive habits he rids himself of destructive tendencies directed not against harmless objects but possibly against a father who is strong and powerful and easily able to wreak vengeance. In a most guarded way Charles admitted he hated his

father. He also spoke of horrible nightmares with murders, knives, ghosts, skeletons, etc., that kept him sleepless and in terror.

Here too approach must be directed in several different directions. In the first place the teachers were made acquainted with the situation so that some tension might be dissipated by their more sympathetic understanding and handling of him. The parents had no insight into his condition. He was a completely baffling mystery. The mother could make nothing out of it. She described his behavior but had no explanation to offer, not even for the situation existing between Herbie and Charles. The importance of presenting the situation clearly to all parties concerned so that it can be easily understood cannot be overemphasized. Without such understanding no sympathy can be expected. It is so common to hear from parent or teacher, "I tried hard to be sympathetic but after a while I just couldn't keep it up." From our viewpoint the parent may be as much the patient as the child and is likewise deserving of a sympathetic understanding. In the case reported, unfortunately, it is essential to direct a considerable portion of the therapy toward Charles, himself. I say unfortunately, because in his case the matter is so exceedingly difficult.

*Maurice L.* C. A. 14. M. A. 12 years, 5 months. I. Q. 89. Sixth grade.

He is peculiar, high strung, nervous fidgety, and not interested in school work. His mother found the situation too much for herself, had no patience with Maurice, put all the blame on him. She said she had never been strict enough with him, that he had his own way too much, and that all he needed was a good licking. She was a tall, well built, "handsome" type of woman, engaging successfully in business pursuits. She looked and acted as though she usually got her way in things. Maurice was tall, well built, athletic and very handsome. At the clinic he was sulky, pouted, was impolite, told his mother, "Hold my hat," etc. It took several sessions at the clinic before Maurice felt free to talk intimately of his difficulties.

Shortly after his birth, his mother had secured a divorce from her husband. Maurice was brought up by his mother and maternal grandparents. They all spoiled him. Nothing was too good for him. If he asked for a nickel, he was given a quarter. Between the mother and boy existed an exceedingly strong attachment. She gave him all her love and affection. She always had him sleep with her. Undoubtedly the mother was then satisfying her emotional needs left unfulfilled after her divorce. At the threat of losing him to school when he was six she reacted by suffering a

"nervous breakdown." She finally decided not to send him to school until he was 7. The day before he was to start school he fractured his leg in an accident and for several months was in a hospital. There he had almost a whole room full of toys and received all the attention his family could give. It wasn't until he was 8 that he started school. This new era in his life though long delayed, and long expected, was ushered in very abruptly and harshly. All his toys were disposed of and he was bundled off to school. A total stranger to all routine or discipline the first day at school he non-chalantly walked around the class room talking and making acquaintances. He never acquired a liking for school. When his mother married again, he felt "ashamed" and did not attend the wedding. Following the marriage, his mother went to Patchogue with her husband, leaving Maurice with his grandparents in New York. Maurice was lonely, could not get used to sleeping by himself and felt frightened when alone. At 9 his mother sent for him and for a half year he went to the Patchogue school. At the end of that time, his mother sent him to a private school about 100 miles away, all her attention being taken up by a millinery store she was running. In some way, Maurice felt his mother was trying to get rid of him. At private school he was homesick and very unhappy. He yearned for his mother and at nights would put her photograph under his pillow. He would not conform to discipline, and avoided school work as much as he could. Visits from his mother were infrequent, very brief, and only made him more homesick. On one occasion he ran away from school and managed to find his way home. He was scolded, slapped and immediately sent back. When he was 12, his mother, out of patience with his lack of progress, took him back. At that time she was having difficulties with her husband and a year later separated from him. Maurice told his mother that if she married again he'd never have anything to do with her. He and his mother started sleeping together again and still do (although he is over 14 now). When she is away from home at night he is troubled, takes a chisel with him to bed, hides behind doors when he hears sounds, shivers in bed, remains wide awake. He always entreats his mother to take him with her when she goes away. In addition it came out in the interviews with him that he was suffering from a severe compulsion neurosis which he has had ever since the age of 6. The compulsion has to do with the number 4. He must touch things four times, must repeat things four times, must walk around the block four times, etc. A definite strong feeling of compulsion is present and a fear that some great harm will overcome him if he neglects to perform the compulsive act.

He is in the seventh grade now but is doing very unsatisfactory work, this in spite of special help in school, after-school instruction and private tutor-

ing at home. His I. Q. is 89. This initial handicap, his whole training and character pattern, his reaction toward school work, and his emotional complex toward his mother and his active compulsion neurosis, fully account for his lack of success in his school work. Nothing can be accomplished by forcing him to do school work before clearing up his other difficulties.

*William M.* C. A. 12 years, 7 months. M. A. 14 years, 9 months. I. Q. 117. Second year high school.

It is reported that he is "doing poor work in school this year and has presented many conduct problems of mild nature. Doesn't keep appointments, comes late to classes, home work unprepared. He is an unusually bright boy who entered high school in January, 1931, at the age of 11."

At the clinic the mother did not give the physician any opportunity to congratulate her on her son's scholastic achievement. She interrupted quickly. "I always told him I didn't think it good for him to be in high school so young. I told him it made him unbalanced and was unfair to the older boys." She went on to talk of punishment that he needed. "I guess he ought to go to a military school." She complained that he resented every order she gave him, that he was crazy for attention and would do most anything at home to obtain it especially when visitors were present. He was jealous of his younger stepbrother, was a sissy, never played with boys, but occasionally did so with girls to her embarrassment. "He's always thought he was smarter and better than everybody else. Miss W. filled him up with wrong ideas, that he was brilliant, would be a great author, etc. He wants to be an author. "Now doctor, you know that's not practical. I've told him that he had no ability along that line. He thinks the world is against him, that he is right and everyone is wrong." When William was a little over a year old his mother obtained a divorce from her husband. When William was two and a half she put him with a Miss W. to board while she devoted all her time to making a living. Most of the time she spent travelling, selling books. Miss W., a spinster, was devoting herself to art, music and furthering her own quite definite and decided ideas. Many of these had to do with the raising of children. To her William meant an experiment that she pursued with all her zealous energy. She accounted for nearly every minute of his day. She gave him constant and unremitting supervision. Under her tutelage he made very rapid progress in schooling. Even his summers were spent in study so that no time might be lost. His extra-curricular activities included piano instruction against which he found rebellion of no avail. For recreation he might listen to the conversation of the visitors on art and literature or attend to Miss W.'s five cats. He was not permitted to play with other children, especially boys who might generally be rough and uncouth. As a result he got a

reputation of being a sissy and was persistently teased by the other children, particularly because he was making out so well in school. His most unhappy existence was still somewhat bearable because Miss W. was devoted to him and very proud of him and was already dedicating him to a life of brilliance and genius. No wonder he thought he was smarter and better than the rest. In the first place he was, but besides, smartness and brilliance were his only possessions, the only things that gave him standing. He could not count on a mother's love that asked no questions and demanded no price. When William was six and a half years old his mother married again. After the birth of her second child, Bruce, she brought William back and kept him for a short while. However, she found it necessary to return him to Miss W. He had been most difficult to get along with, had constantly annoyed his stepfather and had teased his stepbrother, Bruce. Back at Miss W.'s, he at least had some position and security. A year ago his mother again took William home and from then on things rapidly grew worse. This is quite easy to understand. Whatever solace there had been at Miss W.'s, whatever there had been to spur him on, was all gone when he went home. His mother gave him no praise or encouragement for his school work. Instead she seemed to go out of her way to tell him she thought it injurious to him. His ambitions she dismissed with cold skepticism. Become a famous writer? Impractical, besides what had he written so far? Surely if he were to become a great writer, he should have already produced something worth while. She suspected that he was jealous of Bruce. Bruce had always been very sickly, sometimes dangerously so and to him she had been a mother, solicitous and loving. It is no wonder that the onset of William's difficulties in school coincided with his return to his mother.

The boy, himself, on his first clinic visit made immediate friends of physician, nurse, psychologist. He was bright, handsome, very likeable. He told his story clearly, spoke more readily of his own failings than of those of others. He had an unusual degree of insight into his condition. He mentioned the effect Miss W.'s training had had upon him. "It made me different. I was called a sissy. No one would play with me. The other boys are bigger.. I can't do any of the things they do, or show interest in the things they like. I go with them, they get to talking about cars and engines, and I have to be silent, or they climb trees. I can't and they ask, 'What's the matter?'"

Did he receive any help in overcoming the obstacle of an early rigid, pernicious training? His mother suggested to him that he stay away from his classmates. They were older and bigger and it wasn't fair to them that he tagged along. She complained because he wasn't manly, yet she wouldn't



let him go out with the boys at night and made him go to bed at 8. He didn't say much about his mother. She scolded him because he wouldn't always do his chores but "she was right—it's only fair that I do them." He made no mention at all of his black eye until he was asked. It was the result of a quarrel with his mother, who lost her temper and head and forgot the properties of the stick she held in her hand.

These cases take up by far the greatest time and demand most skill and preparation. Cooperation is the keynote upon which success is built. Teachers and principals must be seen and the situation explained to them. This often means that just "another one who doesn't understand me" becomes a friend. In William's case, the principal has eased up all pressure on scholastic work and is concentrating on getting him into a sympathetic group of boys. His aim is to make William happy. No matter how difficult the situation elsewhere, there is some help at least in having school hours bearable.

The approach toward many of the parents is much more difficult. They do not look upon themselves as the patients or the ones requiring advice and treatment and it is necessary to be cautious, sympathetic and slow in working out their problems. Often it serves no purpose at all, in this group of cases, to acquaint the parents with the interpretation and to instruct and advise them accordingly. The interpretation may be rejected or sufficient resistance raised to close the case. The treatment will have as its aim the acquiring of the interpretation, but this may have to proceed slowly as a systematic, sympathetic exposition of their own lives and difficulties so that the interpretation will gradually emerge from within and have meaning and significance, instead of being thrust upon them from without, something foreign, painful, to be rejected.

The approach toward the child requires understanding and skill. In certain of its phases the clinic treatment of children is still in the experimental stage.



## THE CATATONIC SYNDROME IN DEMENTIA PRAECOX\*

BY LELAND E. HINSIE, M. D.

In an effort to assemble facts gathered from the observations on patients in the various New York State hospitals and to foster a more intense interest in the various problems of the catatonic syndrome in dementia praecox, Dr. C. O. Cheney, director of the New York State Psychiatric Institute and Hospital, planned and directed a symposium on that topic. The present communication comprises a summary of the observations presented by the several participants in the symposium.

The symposium was opened by a description of the clinical picture of catatonia, following the observations of Kahlbaum and of Kraepelin in particular, but including also such subsequent observations as appear to have gained more or less general agreement among those who have made special studies on catatonia. It was considered advisable to have a uniform clinical picture in mind, so that those who contributed to the symposium would be discussing the same syndrome. The clinical cases included in the symposium therefore met the following requirements: (1) Diagnostic uniformity, based on the description formulated by Kraepelin; (2) all cases were over the age of puberty and under the period of the climacterium; (3) the catatonic syndrome did not appear by direction or by inference to be associated with any recognizable organic disease. For example, no case was included, no matter how closely it resembled the catatonic type of dementia praecox, if there was any question of associated infectious disorders (e. g., epidemic encephalitis, syphilis), trauma, brain tumor, or any other form of known organic disorders.

*Pre-psychotic personality characteristics.* Careful observations were made with respect to the personality reactions of those individuals who later developed the catatonic form of dementia praecox. Hoch and others had expressed the opinion several years ago that a certain percentage of patients with dementia praecox did not, before the onset of the mental disorder, possess the so-termed shut-in, or schizoid or introverted type of personality. In the present sym-

\*Report of a symposium held at the New York State Psychiatric Institute and Hospital, New York, N. Y., April 20 and 21, 1932, and at the Utica State Hospital, Utica, N. Y., April 27 and 28, 1932.

posium studies were confined to those patients who later experienced a catatonic reaction.

Blalock made a special study of the personality characteristics in 22 patients of the catatonic form of dementia præcox. In the opening remarks he stressed the fact that in 13 of the 22 patients there was approximately an equal balance of introversion and extraversion; that is, the patients could not be classed either as introverted or extraverted. The 9 remaining patients showed a distinct preponderance of introverted tendencies. Blalock was unable to designate any of the 22 patients as definitely extraverted. Blalock's findings are similar to those of other investigators in that he also determined that about 60 per cent presented the shut-in type of personality. He added that "the emotional reaction seems to be somewhat inadequate." As a rule the general output of energy was reduced and environmental interests were limited. Stubbornness and aloofness were frequently observed. Blalock also emphasized the reticence and over-conscientiousness in his group of patients.

Faver reported on 154 unselected cases admitted to the Buffalo State Hospital from 1926-1932. The personality trait that stood out above all others was seclusiveness, which was an outstanding factor in a little over 45 per cent of the cases. There was a second prominent personality feature in the form of seclusiveness and irritability; these combined traits were observed in over 10 per cent of the cases. In other words, seclusiveness either alone or in association with irritability comprised almost 60 per cent of the 154 cases. Irritability alone was observed to be pre-eminent in about 8 per cent of the cases. Faver felt that almost 19 per cent of the cases studied by him did not exhibit any striking personality traits; the individuals in the latter group were adjusting themselves with fair adequacy; it could not be claimed that they showed any marked deviation from what could be considered a well-integrated type of personality. A smaller number of cases were characterized as overactive; a few were designated as unstable and another small group were described as having a depressive tendency. Faver took occasion to mention that suspiciousness and egotism were not often observed in the 154 cases studied by him.

Bigelow carried out his research on the personality factors in 35

cases admitted to the Utica State Hospital from 1919 to 1931. The majority of his cases were described as over-sensitive and self-interested, though he felt that two of the cases could with reasonable certainty have been regarded as "average" or "normal."

McIntosh reported on the study of 20 patients observed at the Rochester State Hospital. Nine of the 20 patients "showed a fairly good personality organization." In general they were industrious, energetic and were capable of good social adjustment. On the whole, however, in this group of 9 patients there was a leaning to day-dreaming and to submissiveness. Among the remaining 11 patients seclusiveness was quite evident and preponderant. There was a distinct tendency to withdraw from environmental contacts. Irritability and stubbornness were not infrequently observed.

It appears, therefore, that it may be emphasized that among those who develop the catatonic form of dementia præcox, a number of patients adjusted themselves to a relatively satisfactory level before there were any symptoms of a psychiatric character. Judging from the comments made in the literature, together with the observations reported in the present symposium, it may be expected that over one-third of the patients who develop the catatonic form of dementia præcox arise from personalities that cannot be designated as "shut-in" or introverted or schizoid. Irritability, stubbornness and seclusiveness are frequently reported to be outstanding character traits in about two-thirds of the patients.

*Prognosis.* Niles brought out some interesting data on the clinical outcome of 31 patients who had been discharged from the Hudson River State Hospital from 1925 to 1931. At the time that they left the hospital 11 of the 35 were regarded as recovered, 10 were designated as much improved, 11 as improved and the remaining 3 as unimproved. Two of the patients have since died and 7 have been readmitted to the hospital. Twenty-two of the 31 patients still remain out of the hospital and of the 22, 18 have gained and maintained a relatively satisfactory adjustment. Many of them have held remunerative positions for a long period.

Grover, in a study of the clinical course in 63 selected cases from the records of the Harlem Valley State Hospital, pointed out several significant facts. In the first place he stressed the observation that the depth of regression often varies widely, not only in dif-

ferent cases, but also in the same case. Grover believes that one should not speak of "terminal regression," for not infrequently patients who have remained at a deeply regressive level for years may eventually achieve a level of remission. He supported the observation that has frequently been made before to the effect that, even when the catatonic syndrome has lasted for years, there is no evidence of intellectual deterioration. Munn, of the Manhattan State Hospital, presented the case record of a patient who had been in a stupor for 10 years and who upon recovery exhibited no alterations of intellectual capacity.

It becomes increasingly evident as one studies a large series of patients that a fairly large proportion of patients gain and maintain a so-called adequate type of adjustment, quite apart, as far as is known at the present time, from the nature of the onset or from the duration of symptoms or from the depth of regression. Patients whose onset of psychosis is abrupt or insidious may attain a state of recovery, although as a rule, as Kirby has shown, it seems that the slower the onset the more likely is the course of the illness to be prolonged. However, there are no absolute prognostic criteria. Nevertheless there is no justification for a feeling of futility simply because of the diagnosis.

As an outcome of studies made at the Utica State Hospital on 37 carefully selected cases of catatonia in dementia præcox, Bellinger was able to express some enlightening opinions. Of the 37 cases who had been admitted to the hospital during the years from 1920 to 1928, 9 were dead, 7 having died of pulmonary tuberculosis, while the remaining 2 succumbed to a cardio-nephritic disorder. Bellinger said that "a considerable number of patients recover," especially those who before their illness had shown a fair degree of integration. There seemed to be less likelihood of recovery if the patient from early childhood up to the onset of the psychiatric disorder had been of the "leaning" type, a day-dreamer, dependent, stubborn and irritable. It was interesting to note that in the majority of the 37 cases a distinct precipitating factor was found. Bellinger felt that the prognosis was more favorable when the precipitating factor was in the nature of a physical ailment. An abrupt onset in itself, according to Bellinger, cannot necessarily be con-

strued as a favorable sign, for among some of his cases the symptomatology developed abruptly and the course was unfavorable.

Voelkle studied the current (1932) status of 107 patients admitted to the Buffalo State Hospital from 1925 to 1928. Forty-six of the patients have had a continuous residence in the hospital since their admission; 9 patients were discharged and subsequently readmitted. He was able to re-examine 29 patients who had been discharged and felt that 17 of them could be regarded as recovered, while 8 were considered to be much improved and the remaining 4 were designated as improved. Twenty-three of the original 107 patients are dead, tuberculosis accounting for death in 9 patients. The second highest cause of death was pneumonia (5 patients). In other words, 14 patients (61 per cent) died of pulmonary disorder. Chronic myocarditis (3 patients), puerperal septicemia (2 patients), violence, acute pancreatitis, abscess of neck, exhaustion from nervous disease, were recorded by Voelkle to have been the cause of death in the remaining patients.

After a careful selection of cases Lybyer was able to report on the prognostic criteria in 20 patients admitted to the St. Lawrence State Hospital from 1918 to 1927. Two of the 20 patients are considered recovered, 4 are improved, 10 remain unimproved and 4 are dead. With such a small number at his disposal Lybyer was not willing to make any conclusive statements, but he was of the opinion that certain factors aid in the improvement of the patient's condition. He thought that the early administration of psychotherapeutic procedures contributed a large share to betterment; constant individual attention and the feeling of hopefulness on the patient's part were also of some consequence in the matter of improvement. Finally, Lybyer also included among the important guides the personality and the intellectual and emotional equipment of the patient.

From the standpoint of the causes of death, Bryan (Manhattan State Hospital) reported that of 38 deaths in the catatonic form of dementia præcox, 16 were attributed to pulmonary tuberculosis, while 12 other patients died of other pulmonary disorders. Four of the 39 patients died of a cardiac disease, 4 of exhaustion, 1 of nephritis and 1 of arteriosclerosis.

Haskins, who reported on the patients admitted to the Kings



Park State Hospital, found that among 254 patients, 32 were dead, 71 were able to leave the hospital and made a more or less adequate adjustment in the environment, while the remaining 151 patients were still in the hospital.

*Thought Content.* Wolff, (Hudson River State Hospital) was able to determine the principal trend of thought in 93 patients of the catatonic form of dementia præcox. It was interesting to observe that the thought content was available in 93 out of a total of 100 patients. Perhaps one of the most significant findings among the stuporous patient was the thought of death. Wolff reported that it was the most prominent of all ideational content in the stupor phase of the catatonic form of dementia præcox patients studied by him. He was impressed also by the frequency of ideas among the group in general relative to "perverse or tabooed" forms of sexuality. Moreover, Wolff stressed the frequency of fear and of punishment. Auditory hallucinations prevailed in 42 per cent of the patients. Thirty-six per cent of the patients gave overt expression to incestuous ideas and ideas of death were often associated with the incestuous phantasies. Wolff's communication seems to be especially noteworthy because, among other things, he showed the striking prevalence of emotional factors. Not only were emotions vividly expressed, but apparently also they seemed to be consistent with the ideational content. Perhaps in this observation there may be a prognostic clew, for it has been suggested that the outlook is better in those patients who do not show a striking inappropriateness or inconsistency of mood and thought content.

It was interesting to know that Helmer (Utica State Hospital) also determined that about half of the number of patients under his observation expressed hallucinations, ordinarily of the auditory type. Helmer likewise mentioned the presence of incestuous phantasies and ideas of death associated therewith. Regression to an early infantile attachment to the parents was not uncommon. Helmer was able to show that many of the so-termed bizarre acts of the catatonic patients are understandable, that is, they are not bizarre when the patient is sufficiently communicative to explain the acts. One patient shouted continuously because she thought she was being drowned. She used to lie on the floor because she thought



the doctor told her to do so; furthermore, in that position the devil tempted her, while at the same time she had to lie down to be forgiven for her sins. She alleged that she had a baby by God. Helmer strongly recommended that patients be studied more in detail, if one wished to gain a clearer idea of the motivation of what is called bizarre behavior.

*Experimental Work.* A particularly extensive research problem was carried out by Ferraro and Barrera on experimental catalepsy. They studied the action of bulboapnine in cats and monkeys with various experimental lesions of the nervous system. Their conclusions are herewith reproduced literatim, as follows:

1. Bulboapnine intoxication in medium doses of 25 mg. per kilo in cats and monkeys (*macacus rhesus*) determines the appearance of motor symptoms which the majority of authors concur in labeling as cataleptic. It also produces vegetative manifestations, the most important of which are the salivatory and respiratory and gastrointestinal.

2. Bulboapnine intoxication in cats and monkeys fails to disclose the necessity of a psychic component in the production of phenomena which have been labeled negativism or hypokinesias by some authors and have been identified with the same manifestations occurring in human catatonia. These phenomena can all be explained on a basis of physical impairment.

3. Catalepsy in our experience involves the following phenomena which are always present but may vary in degree from animal to animal.

- a. Loss of motor initiative.
- b. Maintenance of passively impressed postures.
- c. Maintenance of posture against gravity.
- d. Resistance to passive movements.
- e. Variations of muscular tonus.

4. Bulboapnine catalepsy may be reproduced in cats and monkeys in which part or the whole of the cortex has been removed. The same manifestations occur when the striatum is removed, when the mesencephalon is split through the midline, when the cord is hemisectioned, when the anterior or posterior root is sectioned and when sympathectomy is performed on the animal.

5. The occurrence of cataleptic manifestations following re-

moval of various portions of the central or peripheral nervous systems occurs not only in the chronic stage of the operation but also in the stage immediately following the operation and known as the acute stage. The difference between the manifestations in normal and operated animals and between the chronic and acute stages are essentially related to the neurosurgical defect.

6. The results of our experimental work confute, therefore, the conclusions of those who believe that the presence of the cortex is essential for the appearance of cataleptic manifestations following bulbocapnine intoxication.

7. Because of the failure of detecting any psychic component in the clinical picture of bulbocapnine intoxication because of the fact that catalepsy though associated with vegetative manifestations does not constitute catatonia and because of the possibility of reproducing the same cataleptic manifestations in the absence of the whole cortex and striatum or in the presence of a hemisection of the cord the identification of bulbocapnine catalepsy with human catatonia is not justifiable.

8. Bulbocapnine intoxication reproduces only one important component of human catatonia, that is, the motor component or catalepsy. But catalepsy alone does not constitute catatonia.

9. The fact that catalepsy follows the intoxication by bulbocapnine, an exogenous poison, is not necessarily a proof that in human catatonia the cataleptic manifestations have a toxic origin though it shows that catalepsy may be experimentally reproduced by toxic substances.

10. More significant for the identification of experimental catalepsy with catalepsy in human catatonia would be the reproduction of cataleptic manifestations through the use of endogenous toxins found in abnormal doses or combination in the human body in the course of catatonic dementia præcox.

The results of the clinical application of bulbocapnine was reported by Lang and Kilpatrick, who made their observations at the Marcy State Hospital. They were interested in finding out what changes, if any, might take place in the motility and tone of muscles under the use of bulbocapnine. Several types of clinical disorders were selected; there were two patients with the catatonic form of dementia præcox, one with the hebephrenic type; one case

was diagnosed as psychosis with mental deficiency; one exhibited the Parkinsonian syndrome following epidemic encephalitis; and there were two patients with Huntington's chorea. The authors concluded that in their group of patients they were unable to obtain results comparable to those reported by other observers.

Within the past few years observations on the use of sodium amytal and of sodium rhodanate have been steadily accumulating. At the symposium several interesting communications were read. Harris and Katz (Psychiatric Institute and Hospital) reported that a group of patients manifesting various functional psychoses were given intravenous injections of sodium amytal. It was noted that a number of these patients showed transient but marked ameliorating effects following the injection of 1 to 1.5 c.c. of a 10 per cent solution. In some the effect occurred within one-half minute following the injection and was obtained without inducing narcosis. Oral administration of the drug failed to produce these marked effects.

Another group of patients of different psychoses were given sodium amytal orally for varying periods of time and then after a free interval sodium rhodanate was administered in order to determine whether the effects produced by these drugs bore any relation to the type of psychosis. No such discriminating affects were observed in the cases studied. Several of the patients showed toxic manifestations with the sodium rhodanate.

Lang and Hutchings (Marcy State Hospital) reported on the use of sodium amytal and sodium rhodanate injected intravenously. They injected the same patient at different times with each of the drugs mentioned and were of the opinion that the drugs produced opposite results. It was felt that the intravenous injection of sodium amytal led to a depression of physiological functions, that is, it produced anesthesia. The intravenous injection of sodium rhodanate is said to be stimulative and was found by Lang and Hutchings to counteract the depressive action of sodium amytal.

At the same institution (Marcy State Hospital) Smith and Schwartz employed sodium amytal in the stuporous phase of catatonic dementia præcox in an effort to render the patient communicative. They reported the results in five patients of dementia præ-

cox and suggested that the drug might be used to advantage in encouraging the patient to speak.

Black, Gronlund and Webster (Marcy State Hospital) in their report first reviewed their results with the use of sodium bromide, concluding that non-productive, idle and unkempt patients were brought to a higher level of adaptation by means of the drug and the special attention that followed the administration of the drug. The authors treated a series of advanced patients with sodium rhodanate and felt that, except in a few cases, the beneficial results were meagre. They could not feel that sodium amytal for their purposes had any distinct advantages as a sedative over sodium bromide or sodium barbital.

Landis (Psychiatric Institute and Hospital) presented some interesting studies under the caption, "Behavior and Postural Changes in Catatonic Patients During Sleep." He showed by lantern slide illustrations the type of behavior and postural activity which is shown by the normal individual during the usual period of nocturnal sleep. He then presented similar photographs of catatonic dementia præcox patients. It was shown that when the catatonic patient goes to sleep he loses his exaggerated postural patterns, and his activity is in no sense markedly different from that of the normal except that in certain cases he is more active. The results seemed to show that the exaggerated postures of the catatonic when awake are most probably cerebral in origin, since the cerebral hemispheres are probably non-functional during sleep.

Stimulated by the observations of Wieser on the influence of X-ray therapy in psychiatric and neurologic conditions, Ehrenpreis, Beckenstein and Derby (Brooklyn State Hospital) undertook some preliminary work in order to gain an impression as to the advisability of further continuing the study. The authors irradiated the pituitary gland in some cases and the ovaries in others. They felt that though the number of patients treated was small there were clinical changes of sufficient interest to warrant further investigation. "In conclusion we can state that in four cases of mental disease treated with roentgen rays all have shown some improvement, either coincident with or following treatment. Whether or not the clinical results are due to the roentgen rays per se is a question that will require further controlled observations."

Kelman (Kings Park State Hospital) carried out a series of experiments on patients showing a stupor syndrome. He administered by inhalation a mixture of carbon dioxide (60 per cent) and of oxygen (40 per cent) to 15 patients, two of whom were believed to exhibit what has been called benign stupor. In all instances there was a period of lucidity lasting from about 4 minutes to 20 minutes. It was felt that there was improvement in each of the patients. Kelman noticed that fear associated with the treatment seemed to be a determinant in causing the patients to be aroused from the stuporous condition. He suggested that gaseous inhalations of the type given may serve as a useful means by which one may gain a knowledge of the thought content in stuporous patients.

Following is a list of the papers read at the symposium and their authors.

- Bellinger, C. H.: Prognosis in Dementia Præcox, Catatonic Form.
- Bigalow, N. J. T.: A Study of the Pre-Psychotic Personality in Cases of Dementia Præcox.
- Black, N. D., Gronlund, A. A., and Webster, W. R.: The Use of Sodium Amytal and Sodium Rhodanate and Sodium Barbitol in the Control or Treatment of the Psychoses.
- Blalock, J. R.: Personality and Catatonic Dementia Præcox.
- Bryan, E. L.: A Study of the Prognosis of Dementia Præcox, Catatonic Form.
- Durgin, D. D.: Personality and Emotional Factors in Schizophrenic Negativism.
- Ehrenpreis, B., Beckenstein, N., and Derby, I. M.: Interesting Observations with Roentgen Therapy in Mental Illness.
- Faver, H. E.: A Study of the Personality in Catatonic Dementia Præcox.
- Ferraro, A., and Barrera, S. E.: Experimental Catalepsy (the action of bulbo-capnine in cats and monkeys with various experimental lesions of the nervous system).
- Grover, M. G.: The Study of the Course of Dementia Præcox Over a Period of Fifteen Years.
- Harris, M. M., and Katz, S. E.: The Effect of the Administration of Sodium Amytal and Sodium Rhodanate on Mental Patients.
- Haskins, J.: Prognosis in Dementia Præcox, Catatonic Form.
- Helmer, R. D.: Thought Content in Catatonic Dementia Præcox.
- Hinsie, L. E.: Clinical Manifestations of the Catatonic Form of Dementia Præcox.
- Kelman, H.: Observations in Catatonia with Mixtures of Carbon Dioxide and Oxygen.
- Landis, C.: A Comparison of Postures in Sleep and in Catatonic Stupors (Lantern Slides).
- Lang, H. R., and Hutchings, C. W.: Reversal Behavior in Catatonic Dementia Præcox Under Intravenous Administration of Sodium Amytal and Sodium Rhodanate (Sodium Thio-cyanate).

- Lang, H. B., and Kilpatrick, O. A.: A Report on the Response of Cases of Hyper- and Hypo-motility to Bulbocapnine Injection.
- Lybyer, P. C.: Prognosis in Dementia Præcox, Catatonic Form.
- McIntosh, D. J.: A Study of the Personality in Persons Developing Catatonic Dementia Præcox.
- Munn, C.: Report of a Case Recovered After Ten Years' Stupor Reaction.
- Niles, C. E.: Survey of the Course and Present Condition of Catatonic Dementia Præcox Patients Discharged from the Hospital.
- Smith, P. L., and Schwartz, D. K.: Sodium Amytal as a Means of Obtaining Contact in Stuporous and Uncommunicative Cases.
- Voelkle, A. J.: Prognosis in Dementia Præcox, Catatonic Form.
- Wolff, S. C.: Thought Content in Catatonic Dementia Præcox.



## CLINICAL MANIFESTATIONS OF THE CATATONIC FORM OF DEMENTIA PRAECOX\*

BY LELAND E. HINSIE, M. D.\*\*

In investigations on the catatonic form of dementia praecox it seems desirable to have a uniform clinical syndrome in mind, so that all may be discussing conditions that are similar and hence comparable. For research purposes one should have as clear a conception of the premises upon which one builds further observations as is possible. It is presumed that the participants in the symposium have selected patients whose clinical condition comes reasonably clearly into the clinical description presented in the following outline. It is not intended herein to cover all the questions that have been raised about catatonia, for such an approach is obviously the purpose of the other contributors to the symposium. It is hoped to include the known and commonly accepted clinical facts that go to make up the clinical syndrome under consideration, in order that all of us may have a common starting point. Therefore, the signs and symptoms of the well-defined case are first described.

The *catatonic stupor* is characterized by the symptoms of negativism and automatism. The patients are taciturn, sparing of words; they may stop in the middle of a word or sentence and may gradually cease talking entirely (mutism). Sometimes they lisp softly some unintelligible words or phrases; they may carry on whispered conversations with themselves; they may give vent to sudden bursts of laughter. Often they start to speak, but quickly stop. Generally the same principles are noted in their other activities. They may or may not write spontaneously or under inducement; they may write disconnected words or phrases; they may stop writing at any point; the writing may appear as a senseless scribble; they may write the same word or phrase or symbol over and over again. They are generally uninfluenced by environmental stimuli; they may or may not withdraw from what are commonly considered to be painful stimuli.

\*Read at the symposium on the catatonic form of dementia praecox, held at the New York State Psychiatric Institute and Hospital, New York, N. Y., April 20 and 21, 1932, and at the Utica State Hospital, Utica, N. Y., April 27 and 28, 1932.

\*\*From the Clinical Department of the New York State Psychiatric Institute and Hospital.

*Negativism.* Any attempt, feigned or direct, to interfere with the attitude or movements of the patients is met with stubborn and insurmountable resistance. Every muscle may be strained to its utmost. Requests may be responded to by exactly the opposite of what is requested. The patients may refuse to dress, to eat, to move—in fact, to do anything as requested, but may do the contrary. They may lie under the bed, not on it; they may sleep on the covers and cover themselves with the mattress; they may go to another's bed, not to their own. Under inducement to eat they may shut the mouth tightly. When alone they may eat ravenously or not at all.

They may retain urine and feces for an unduly long time; they may empty the bladder or rectum without regard for any cleanliness. They may not evacuate the bowels or bladder when placed upon the proper receptacle, but a moment later may do so on the floor or in the bed. Often saliva is held until the mouth is as full as possible; it may then be forced out in one large flow or it may drool slowly; or the patients may soil their surroundings by constant spitting.

*Muscular rigidity.* Generally associated with the negativism is an extraordinary uniformity of attitude and muscular tension. The patient may remain in exactly the same position for days, weeks or months. The pose that is taken may appear "natural" or remarkably awkward. The patient may be moved as one mass—"en bloc." The eyes may be tightly shut or widely opened. Winking may be long delayed. The fists may be tightly clenched. Facial expression may be immobile and mask-like; or it may seem to be a constant scowl. The lips may be protruded like a proboscis. Grinning and grimacing are often present.

*Gait.* It is often impossible to induce the patient to walk. The patient may fall to the floor as one piece when pressed to walk. He may shuffle along rigidly, perhaps on tip-toe, perhaps on the outer edges of the feet, perhaps with the lower limbs widely spread. But resistance is common.

*Suggestibility.* There may be heightened susceptibility to external impressions. Chief among these symptoms is the condition called *cataplexy*, and recognized also by the term *cerea flexibilitas*. The patient makes no movement on his own volition, but maintains

attitudes that others have put him in. Catalepsy may be flexible, as just described, or it may be rigid, that is, the musculature may be extremely rigid and held in a stationary position for long periods.

Echolalia and echopraxia may appear. They refer to an apparently wholly mechanical repetition of words or movements of others.

*Alternating states.* Kræpelin says that both of these, only apparently opposite states of mind—expressed hostility and entire surrender to external influences—are exhibited by the patient at irregular intervals and entirely independently of each other.

*Excitement.* There are various secondary catatonic features that are designated as catatonic excitement. The excitement comprises numerous impulsive acts and stereotyped movements. The acts generally are sudden outbursts—of talking, singing, dancing, tearing the clothes, upsetting articles of furniture, expectorating, etc.

*Stereotypy.* Often the patient repeats awkward, stiff, clumsy and apparently senseless movements. Episodes of stereotyped movements remind one vividly of hysterical disturbances. Sometimes during such impulsive acts the patient may mutilate himself by biting, striking, burning or digging into his skin.

*General behavior.* Usually the habits are filthy. The patient passes his excretions under him; he may gather and eat his feces; he may lick his urine from the floor. He may stuff food in the anus; he may expectorate over his foodstuff. Often masturbation is carried out with complete abandon.

Often one sees stilted gestures, grimacing, continuous shaking of the head and nodding, monotonous howling and other mouth noises. The speech may be singing or commanding, jerky, precipitate, interrupted. Sometimes it becomes a series of senseless repetitions. Neologisms are not uncommon and may be repeated for days or years.

*Writing.* There may be endless repetition of similar flourishes, numbers, letters, words and phrases. Writing may be very uneven at times; it may be slow, hesitating, interrupted at the beginning; later it may become quick; still again it may be free and easy.

*General mental state.* At times consciousness is beclouded; the

patient may have only a hazy conception of what is going on about it. However, as a rule orientation is intact.

Insight may be completely lacking at times or there may be a certain realization of their condition. But most patients lack an adequate comprehension of the gravity of the disorder.

*Mood.* In the beginning of the illness there may be marked mood changes. Later as a rule the patients show a pronounced apathy. Apathy may be interrupted by childish moods.

Illusions and delusions of all sorts may occur. Hallucinations may be quite evident for a time.

The symptoms outlined in the foregoing comprise the essential factors that form the nucleus of the present symposium. An effort has been made simply to outline the clinical symptoms that are common to the catatonic syndrome as it appears among dementia præcox patients. It should not be difficult to identify such a syndrome, particularly if the patient has been studied over a period of months. Sometimes one experiences difficulties in the very early clinical career of the patient; and also when the symptoms are observed in cross-section only. If there is any question about the clearness of the diagnosis the patient should not be included in the symposium.

Another point of much consequence centers around the question of complicating disease processes. Patients who have a well-recognized organic disorder are not included in this group. For instance, a clearly-defined catatonic syndrome on a dementia præcox basis may be observed in patients with general paralysis, or with epidemic encephalitis, or with a traumatic encephalopathy or with alcoholism or other forms of drug intoxication. Only those patients in whom there is no clearly established associated disease process should be included in this group.

The patients may meet requirements in addition to those mentioned above that may help to substantiate the diagnosis. The type of personality upon which the catatonic syndrome is engrafted may be a distinct help in certain cases. The nature of the onset may give a further clue. These and other questions are left open as a part of the research program. Likewise the course and termination, as well as the study of organic symptoms, are a part of the research program.

According to Kræpelin and others there are other features of the catatonic form of dementia-præcox that may serve as aids from the diagnostic standpoint. They are less certain than those given in the foregoing and are recorded here, not only because they may help in the diagnosis, but more particularly because they round out the total clinical description as it is now understood.

Kirby states: "It is questioned whether or not one is justified to speak of definite diseases with fixed course and outcome. It will be conceded here that prognostic studies so far made can have little real value when the clinical groups are so vaguely defined." This was published in 1913. He quoted from Adolf Meyer to the effect that "the course of events and the termination are accounted for by the dynamic forces at work in an individual life and by the type of reaction itself, some mental reactions being biologically unfavorable for return to normal attitudes, while others are less so." Kirby held the opinion that "from the point of view of formal symptomatology very similar clinical pictures occur in deteriorating and non-deterioration forms. The most reliable prognostic data are gained from a study of the constitutional tendencies and the mode of development of the psychosis. When the anamnesis reveals a gradual change in the personality with indications of that type of defective biological adaptation which we are coming to look upon more and more as the foundation for dementia præcox, then the prognosis is bad."

In speaking of the *character of the onset* Kræpelin said that the psychosis as a rule begins subacutely, with the signs of a more or less severe mental depression. Not infrequently symptoms of a neurasthenoid character may precede the catatonic state. The patients become quiet, depressed, inattentive, anxious, irritable and perverse; they complain of headache, pains, difficulty in thinking, fatigue, loss of sleep and appetite; they withdraw from their surroundings, give up work and spend a large part of their time in bed. This stage may last for a day or for a year or more. Sometimes the disorder first shows itself by repeated exhibitions of violent ill-temper, with calmer intervals.

Illusions, hallucinations and delusions begin as a rule in the early stages. These may be very phantastic and are largely of the "projected" type.



The train of thought is broken and incoherent; judgment is seriously affected.

Kräpelin said that in the early part of the disorder the mood is usually sad and anxious. The patients sigh, wail, pray; they are sometimes excitable, distrustful, gloomy, threatening. In the interval between attacks they may be childishly cheerful. They are generally under the influence of active sexual excitement.

*Late stages.* Fifty-nine per cent of the patients reported by Kräpelin exhibited "a peculiar developmental imbecility" in the late stages. There is a general recession of earlier symptoms (excitements subside, rigidity disappears, illusions, hallucinations and delusions retire into the background) and there remains a pronounced apathetic state, that is occasionally punctuated by psoradic interests in the surroundings, and also at times by violent outbursts.

However, Kräpelin felt that a very severe grade of dementia was not reached in about 27 per cent of his patients. In this group there remained a mild terminal dementia.

*Prognosis.* In Kräpelin's group about 13 per cent were regarded as having achieved a level of cure; that is, the symptoms of the disorder completely passed away and the patients were able to re-establish themselves on the plane that characterized their prepsychotic type of adjustment. Even in some of these patients there remained some slight evidences of the former illness. The so-called cure may last a few years, sometimes 8 or 10 years; relapse in the general outcome.

There may be sudden transitory remissions, with a more or less sudden abatement of all symptoms, lasting for a few hours or a few days. This condition happened in a large number of Kräpelin's patients.

Longer remissions occurred in about 20 per cent of Kräpelin's patients—"so long a time that the patients seem to have permanently recovered." It is not a complete cure, however, for certain peculiarities in conduct still remain.

Strecker and Willey reported that among 45 dementia præcox patients of the catatonic form, 18 recovered.



## PROGNOSIS IN SCHIZOPHRENIA--CATATONIC FORM

BY C. H. BELLINGER, M. D.,  
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A review of the literature on schizophrenia discloses that the early writers were apparently chiefly concerned with the etiology and clinical picture of this disorder of the mind which was generally conceded to have an unfavorable termination. The almost universal concept of the early investigators regarding the poor prognosis in dementia præcox in all probability accounts for the fact that their writings show a dearth of prognostic criteria. However, Kræpelin<sup>1</sup> early recognized that recovery appeared to take place in certain cases of dementia præcox and came to the conclusion that about 13 per cent of his cases of the catatonic type seemed to recover. This statement of Professor Kræpelin brought forth much discussion and stimulated further investigation relative to the matter of prognosis. Meyer<sup>2</sup> reported that from 20 to 25 per cent of his patients, who showed catatonic phenomena, apparently recovered. Ræcke<sup>3</sup> found that 15.8 per cent of his cases seemed to be practically well after a period of from three to seven years. Mattauschek<sup>4</sup> observed recovery in 5.5 per cent of his cases. Zablocka<sup>5</sup> and others expressed the belief that not a single genuine case of dementia præcox ever fully recovered. Schmidt,<sup>6</sup> from a study of 455 cases, found that dementia supervened in 57.9 per cent of the cases; in 15.5 per cent recovery with defect was noted; and 16.2 per cent were apparently cured. Kirby<sup>7</sup> reported that certain of his cases, essentially catatonic throughout, ended in recovery. Rosanoff,<sup>8</sup> in 1927, quoted Kræpelin as of the opinion that recovery in catatonia occurred in approximately 20 per cent of the cases. Henderson and Gillespie,<sup>9</sup> in their second edition, refer to the reversal of opinion regarding prognosis in dementia præcox and made the statement that while the disturbance is a serious one, certain cases do readjust themselves.

During the past two decades there has been a growing tendency on the part of hospitals, with the aid of social service departments and improved methods of transportation, to secure more complete histories. This has resulted in a better understanding of the patients and more accurate diagnoses. Moreover with the after-care

and supervision, which is now a routine, many patients who heretofore could not adjust themselves to extramural life have been enabled to resume their former places in society. Contacts with paroled patients are kept up over a much longer period than was thought possible 20 years ago and as a result of data which has been obtained through various channels, the general concept relative to prognosis in schizophrenia has undergone a gradual change so that today recovery in dementia præcox is regarded not only as possible but as actually taking place in a considerable number of cases.

A survey of the records of the Utica State Hospital during the years 1920 to 1928, inclusive, revealed that 45 cases were originally diagnosed as schizophrenia of the catatonic type. However, further study and observation failed to show justification for the diagnosis of catatonia in 8 of these cases. The records of the remaining 37 cases were taken for consideration in this paper. In each instance an effort was made through the social service department of the hospital to supply any desired information which was lacking in the histories. With the exception of two cases, which had been deported, contact was made and a report rendered in the case of each of the patients who had left the hospital. Of the 37 cases, 7 died of pulmonary tuberculosis after an average hospital residence of 2 years and 23 days. In only one case was there a history of tuberculosis in the family and in that case the father died of the disease two years before the patient's admission. Two other patients, who had a history of acute rheumatism prior to admission, became toxic and died of endocarditis and nephritis after an average hospital residence of three and one-half months. Two patients, a young woman 19 years of age and a young man 24 years of age, were deported to their native countries after a hospital residence of 5 months and 6 days and 8 months and 10 days, respectively. At the time of their discharge both patients were mute, inaccessible and definitely psychotic. Sixteen patients, whose mental illness shows an average duration of 11 years and 1 month, are now in State hospitals. In each instance the diagnosis of catatonic dementia præcox has been confirmed by continued observation. Nine are recorded as idle, inaccessible, irritable, impulsive and evidently deteriorated; 4, as seclusive, introverted, negativistic, subject to out-

bursts of irritability and impulsive behavior, but when not actively disturbed are able to do some work in occupational therapy classes. One patient is reported as irritable, impulsive, inaccessible, but cleanly and able to do some ward work under supervision. Two male patients are seclusive and as a rule mute, but at times have outbursts of irritability and excitement. During their quiet periods they are employed in outside squads where they work rather automatically.

In addition to the 16 patients actually receiving intramural treatment, one female patient, whose psychosis developed at the age of 28, showed slight improvement at the end of three years and four months hospital residence and after persistent requests by relatives she was paroled from the hospital on July 3, 1931. The clinic physician and social worker, who have seen her at least once each month during her parole period, describe her as silly, childish, idle, delusional and incoherent. Much of the time she is mute, while on occasions she becomes irritable and impulsive. She has no insight into her condition and requires much supervision from her family. This patient is not adjusting well to conditions at home and in all probability it will be necessary for her to again receive hospital care in the not far distant future.

The histories of the 9 remaining cases of this group, all of whom have been discharged from the hospital, are as follows:

CASE 1. W. G., male, 16 years of age, native born, father alcoholic and suffering from dementia præcox of the paranoid type. Patient was one of a family of several children; was dull in school; inclined to be mischievous; grade reached unascertained.

When 15 years of age, father became psychotic which added to the family burden and indirectly brought about patient's commitment to a State school. Soon after his admission to the institution, he became untidy in his habits; refused food; had to be forcibly fed; and remained in bed.

He was committed to a mental hospital, January 19, 1923. Physical examination was negative except for slight anemia. At times, he laughed in a silly manner without apparent reason. There were occasional periods of excitement during which he would call out, and on one occasion, he exclaimed, "You are putting too much lead into me; you are putting clay into me." At another time, he said, "The leeches are tied to me, to my back. I mean while I am at the toilet." Little improvement was noted during the first year of his residence in the hospital, after which time he

began to take some interest in his personal appearance, and worked in the occupational therapy classes. After a hospital residence of 15 months although showing evidence of mental defect, he no longer manifested psychotic symptoms and was paroled to the custody of a State school where he remained for a period of 5 years and where he is said to have gotten along well and made himself useful in the kitchens and dining rooms. He was discharged to the custody of his family in October, 1929, and has since lived outside of an institution.

Two forms of mental disease might be considered in this case: dementia præcox and psychosis with mental defect. However, his silly behavior, delusional trend and the duration of his symptoms, would seem to warrant the diagnosis of dementia præcox.

Nearly 8 years have elapsed since the patient's discharge from the hospital. Since his mother's death in January, 1931, he has lived with a maternal aunt on a small poultry farm in a New Jersey town. Recent information from the aunt disclosed that he is in good physical health, quite orderly, cleanly, able to assist with work about the home and with the care of the poultry, does some reading, and attends motion pictures. Although requiring some supervision because of his mental defect, he shows no psychotic manifestations and it would seem that he has adjusted himself well in a sheltered environment outside of an institution for a period of 2 years and 7 months.

CASE 2. F. S., 31 years of age, wife of butcher, father alcoholic, mother died of apoplexy at 51. Patient was third in the order of birth in a family of six daughters; received a common school education; worked as a domestic until her marriage at 23. One daughter was born five years after marriage. It is said that she never cared for society, spent much of her time working about the home, and was devoted to her father who went to live with her after the death of her mother three years prior to the onset of the patient's illness. About two months following the death of her father, patient began to show definite psychotic symptoms, developed auditory hallucinations, was restless, resistive and unmanageable.

Admitted to a mental hospital, April 29, 1920. Physical examination at the hospital was negative. On admission, she was resistive to attention, removed her clothing, refused food and had to be forcibly fed. At this time, she was uncleanly in her habits, occasionally, she became excited, jumped from her bed, rushed about the ward assuming peculiar postures and showed considerable cerea flexibilitas. There was much silly laughter during the early part of her hospital residence. At times, she muttered to herself, appeared to be troubled by auditory hallucinations, and occasionally, she called out some irrelevant remarks as: "I want my Indian; I want

to get out." Little improvement was noted during the first eight months of her residence in the hospital. She then became more alert, fed herself, and after some urging replied to questions asked. It was found that she expressed a delusional trend of an accusatory nature. A trial visit at home during the tenth month of her hospital residence proved a failure as she was so resistive to attention that she could not be cared for. She gradually improved and left the hospital, July 10, 1921, at which time she gave no evidence of hallucinations or delusions and admitted that her mind had not been clear.

Two diagnoses are worthy of consideration in this case: manic-depressive psychosis, and schizophrenia of the catatonic type. However, her silly negativistic behavior, auditory hallucinations, resistiveness, and apparently purposeless outbursts of excitement and screaming, would seem to substantiate the diagnosis of schizophrenia.

Following her return home in July, 1921, she showed little tendency to associate with others for several months but occupied herself with her housework. However, she gradually began to take interest in the activities of her church, and she has gained considerable satisfaction from her religion. She, also, belongs to a card club, the meetings of which she attends regularly. Patient, ten and three-quarters years after her discharge from the hospital, is happy, contented and apparently well adjusted with a good insight into her previous mental illness.

CASE 3. R. L., male, 17 years of age, native born, single, farm laborer, father alcoholic. Patient was second in order of birth in a family of three boys. He left school at 15, after graduating from grammar school, and secured work as a laborer in the General Electric Works. He is described as having been a poor mixer, shy, and unusually fond of his mother. He was seclusive and enjoyed hunting, fishing and trapping by himself. Following his father's return home from a general hospital, where he had undergone a serious operation, patient began to act peculiarly, wandered about the house at night in his underwear, masturbated openly, asked to have two girls with whom his brother had previously gone, come to his room and began to express delusional ideas relative to these girls in whom he had heretofore not been interested.

He was admitted to a mental hospital March 17, 1928. Physical examination was negative. On admission, he was restless, kicked at the attendants, talked in a disconnected manner, appeared dazed and bewildered, had to be urged to eat and much of the time was spoon fed. He retained his urine and had to be catheterized. Patient was stubborn, negativistic, uncleanly, and frequently refused to answer questions asked him. At times, he yelled out disconnected words such as: "know yourself," "whiskers,"



"employment agency," and "taxi." Occasionally, he thought he heard his brother's voice, turned his head to the wall and laughed in a silly manner. On rare occasions, he had impulsive outbursts in which he would jump from his chair or bed, cry out loudly, and when efforts were made to care for him, became very resistive to attention. This condition lasted for about three months when he began to show a gradual improvement. Five months following his admission to the hospital he was paroled. He no longer suffered from delusions or hallucinations, but was inclined to be rather superficial in his attitude, and admitted reluctantly that he had been mentally ill.

After leaving the hospital, he continued seclusive, had difficulty in securing employment and three months later, together with a close friend, he joined the navy, returning home in November, 1930. His mother states that since leaving the navy, he is more sociable and attends parties, but continues to spend much of his time about the home reading and assisting with the housework. He has a position as laborer and as his father is unemployed at the present time, he is contributing materially to the support of his parents and younger brother. The fact that he has assumed a considerable responsibility in the maintenance of the home has caused him to feel his place in the family to be an important one. His parents agree that patient seems well and much better adjusted than before his illness.

CASE 4. H. F., female, 27 years of age, single, father alcoholic, and one paternal cousin schizophrenic. Patient was fourth in the order of birth in a family of five children—two brothers and two sisters. She completed the eighth grade at 15, and left school to work in a factory, where she saved money and contributed to the support of the home. As her mother was in poor health, she spent her Saturday afternoons and Sundays working in the home. Patient is described as having been a good mixer with girls, but never seemed to care for boys. She was sensitive and lacked self-reliance.

Following the marriage of an older brother, and the withdrawal of his support from the home, the patient began to be depressed and suffered from insomnia. She developed the belief that she was hypnotized by her brother, attempted suicide and was admitted to a mental hospital, January 8, 1925. Although excited at the time of her admission, two days later she became stuporous, in which condition she continued for more than two months. During this time, she was forcibly fed, was resistive, uncleanly in her habits and suffered from auditory hallucinations. She improved and five months after admission was paroled to the custody of the superintendent of a general hospital, where she obtained employment as a maid. She continued in this position until March, 1929, when her mother became seri-

ously ill. Patient immediately developed mental symptoms and was readmitted April 2, 1929. Physical examination at this time was negative. On admission she was resistive, negativistic, uncleanly in her habits, and mute. She occasionally jumped out of bed, yelled and screamed, and resisted the nurses who cared for her. Her conversation at this time was scattered. The patient continued to be stuporous for a period of five months, when she gradually became more active and talked disconnectedly. At times, she complained that women called her bad names. Her improvement continued, and after a hospital residence of a little more than nine months she was paroled, and again obtained employment as a maid in a general hospital.

Eight months after her parole from the hospital, her mother died. The patient's reaction to this was normal, and she continued with her employment. During the past year, she has obtained a better position in a private family. She enjoys sewing and reading, takes an interest in moving pictures, and attends church regularly. Since leaving the hospital she has been self-supporting and has given some money to her sister, who has a large family. She does not seem to care for the company of boys but has several close friends of her own sex.

Patient, two years and three months after leaving the hospital, has insight, is happy, self-supporting, contented and apparently well adjusted to the simple routine which she has chosen to follow.

CASE 5. E. C., 31 years of age, married, father moderately alcoholic. Patient was first in order of birth of a family of four children. She is said to have been backward in school which she attended rather irregularly for eight years until she completed the fourth grade. Her father was said to have been partial to her and as a result she was much attached to him. When a small child, patient is described as having been wilful and headstrong, and to have obtained her own way by temper tantrums. When patient was 22 years old she gave birth to an illegitimate child. Patient is reported to have lived with two men prior to her marriage which occurred when she was 26 years of age. The husband was much older than the patient and followed the occupation of a concessionaire. In June, 1924, patient developed pneumonia and was delirious. Following this, she seemed depressed, remained in bed, complained of headache, and developed definite mental symptoms which necessitated her admission to a mental hospital, August 14, 1924.

On admission, she was somewhat undernourished, anemic and toxic. Her family refused to commit her and at the end of 30 days she returned home, but her family was unable to care for her and she was quite promptly returned to the hospital. On her second arrival, she was practically mute, answered only after repeated urging, and replied disconnectedly and irrele-

vantly. She was uncleanly in her habits, made facial grimaces, kicked and struck at the nurses who attempted to care for her, refused food and had to be tube fed. At times, she masturbated without apparent shame. She occasionally called aloud to her father, and muttered to herself as if carrying on a conversation with an imaginary person. Her stuporous period continued for approximately three months when she began to improve.

After a hospital residence of seven months, she was paroled to the custody of her father as she did not wish to return to her husband. On leaving the hospital, she was cheerful, agreeable, denied delusions and hallucinations, frequently smiled in a silly manner but did not appear to have much appreciation of her condition.

She has led an extramural life for a period of seven years, two years of which she was carried on parole. Two months after leaving the hospital, she secured work in a canning factory and later she worked as a domestic. Her husband was convicted of a felony and sentenced to State prison a short time after the patient left the hospital. She has since obtained a legal separation from her husband, and while it is rumored that her morals are not beyond question, she maintains a good personal appearance, is self-supporting, is fond of entertainment, has a good appreciation of the fact that she has had a mental illness, and appears to have completely recovered from her psychosis.

CASE 6. A. M., female, 18 years of age, single, mother subnormal, one brother a schizophrenic, and one sister suffered from an attack of manic-depressive psychosis. Patient was the fourth in order of birth in a family of five children. She completed high school at 18. Patient is said to have been seclusive, religiously inclined, never cared for the society of boys and had few girl friends. She spent much of her time at home and was particularly attached to her father. Her mental illness developed abruptly following a hiking party which she attended with her friends from the high school. She became excited, restless, swallowed a crucifix, and after an operation for its removal, she was admitted to a mental hospital, June 18, 1928.

Physical examination showed after effects of operation, otherwise negative. On admission, she was uncommunicative, but when pressed for answers she responded slowly. She said that she had swallowed the crucifix to purify herself in atonement for an indiscreet act with a boy several years previous. She was resistive, uncleanly in her habits, and suffered from auditory hallucinations to the extent that she frequently expressed the belief that her older brother was talking to her. Occasionally, she became mildly excited and violent. She lay for several days with body rigid, and arms extended in the form of a cross. When visited by her family, she

refused to talk to them and laughed in a silly manner like a small child. This condition lasted about three months when she began to improve and, at the request of her family, she was paroled from the hospital five months and two days following her admission. Five months later, her father died following which her mental symptoms reappeared, necessitating her return to the hospital. At the time of her readmission, she was in good physical health. At first, she seemed depressed, whispered to herself, laughed while talking of her father's death, held her body rigid, and kept repeating, "Jesus, Mary, Joseph." A little later, she was mute to questions, muttered to herself, laughed and cried. When attempts were made to question her, she sat with her arms folded and held her body rigid. She was untidy in her habits, irritable, silly and appeared to have no insight into her condition. She left the hospital against advice, June 6, 1930.

After leaving the hospital, she did not work outside the home until October, 1931, when she obtained work as a domestic at \$5 per week. In January, 1932, she left this employment as she did not consider the work to be sufficiently remunerative. However, she was unable to find another position, and remained idle until March when she returned to her former employment. During the two years which have elapsed since her discharge from the hospital, she has been dependent upon her family the major portion of the time. Although she has few associates, she is, at present, happy, quiet and orderly, appreciates that she has had a mental illness, gives no evidence of delusions or hallucinations, and appears to be adjusting herself fairly well in a rather sheltered environment.

CASE 7. B. T., female, 24 years of age, single, jealous mother, parents separated. Patient was the elder in a family of two, with a younger brother. She graduated from high school at 17. Won State and county scholarships in Cornell, and attended college one year. Her mother and father quarreled during her summer vacation, and finally separated. She was unable to return to college, and had hysterical periods in which she seemed morose. At a mental clinic which she attended, she talked much of her father and was noted as silly and rather superficial. Later, she was assisted in obtaining employment in a girl scout camp where she adjusted fairly well, and, when the camp closed, she obtained work in an institution. In the early part of June, 1927, she refused to eat, was resistive and showed definite psychotic symptoms.

She was admitted to a mental hospital, June 22, 1927, where she was found to be in good physical health. On admission, she was resistive, covered her face with her hands, talked to imaginary people, laughed in a silly manner, was very uncleanly in her habits, muttered to herself and frequently assumed constrained attitudes. During the first two months of

her residence in the hospital, she refused to answer questions as a rule. On one occasion, when an effort was made to question her, she said that she had a child ten years ago and that the child was Christ. She admitted that God talked to her and others communicated with her by wireless. After four months residence in the hospital, she became more active, fed herself, admitted gross homosexual practices when a child, and at times she addressed the doctor as God. She gradually improved and was assigned to work in one of the occupational therapy classes. Patient was rather reluctantly paroled February 26, 1928, eight months and four days following her admission. After leaving the hospital, she remained at home for several months where her improvement continued. Employment was found for her in a girl scout camp where she taught arts and crafts during the summer season. At the close of the camp, she returned home where she has since been employed by her father who conducts a store.

More than four years have elapsed since this patient left the hospital. At the present time, she shows no psychotic symptoms and is happy, contented, pleasant, and agreeable. She works daily in her father's store, attends church regularly, and is planning to teach handiercrafts in a girls' camp the coming summer. She appreciates that at one time she had a mental illness but feels that she is now recovered.

CASE 8. R. M., female, 21 years of age, born in Oklahoma, wife of laborer, family history negative. Patient was third in order of birth in a family of seven children. As a child, she is said to have been reserved and particularly fond of her father who died when she was 16 years of age. She attended school until 15 at which time she had reached the eighth grade. Following her father's death, patient went to work as a domestic on a ranch where she worked for a period of four years. Her employment was terminated by the death of her employer. She married at the age of 20 and a few weeks following her marriage, she and her husband came to New York State. Upon her arrival, she appeared to be somewhat homesick but made no outward demonstration. A child was born 15 months after marriage. Three days following the birth of this child, she became excited, delusional, resistive, destructive, violent and threatened to kill her child.

She was admitted to a mental hospital, October 3, 1925, at which time she was recovering from childbirth and seemed somewhat toxic. She was mute for several weeks after admission, refused food, had to be forcibly fed, and was very uncleanly about her bed and clothing. She appeared to react to auditory hallucinations, muttered to herself, and made peculiar motions with her hands. On several occasions, she rushed about the ward in an impulsive manner, overturned furniture, assaulted the nurses, was resistive to attention, and showed some tendency to exhibitionism. There was much



silly laughter. At times, she assumed constrained attitudes. After six months residence in the hospital, she began to improve, became more quiet and showed some inclination to associate with those about her. She was silly and appeared to have little actual appreciation of her condition. On July 20, 1926, she was discharged from the hospital, and taken to the home of her sister who lived in Missouri. Following her discharge, we received several letters from her sister which indicated that she was silly and somewhat peculiar for about three months. However, she gradually improved, returned to her husband who took up his residence in a western state, has given birth to four children since leaving the hospital, and at no time has she shown any mental symptoms. At present, she is doing the housework and cares for her husband and five children, is interested in community life and appears in excellent mental and physical health. Letters which this patient has written to the hospital indicate that she has good insight into her illness.

CASE 9. E. S., male, 24 years of age, single, mother and maternal uncle died of tuberculosis, paternal uncle died of general paresis. Patient was second in order of birth in family of three children. His early associations were principally with boys. He took some dancing lessons but was not interested in them. He completed the third year of high school at 18, following which he secured a position as office boy at which he worked for six months. He then worked as a salesman for three months and later as a hotel clerk. He frequently changed positions working in various hotels in Florida and the southern states. During October, 1927, he returned home from Virginia, acted peculiarly, said thoughts came to his ears from dogs and animals, and was silly and later violent.

He was admitted to a mental hospital, November 23, 1927, at which time he was found to be in good physical health. Following his admission, he answered questions in monosyllables, allowed saliva to run from his mouth, removed his clothing, was resistive, untidy in his habits, assumed constrained postures and had to be forcibly fed. At times, he admitted hearing voices calling him vile names, such as c. s. and s. o. b. On several occasions, he became excited, threw off his bed clothing, and made impulsive attacks on those who attempted to care for him. It was necessary to feed him during the first nine months of his residence in the hospital. Then he began to feed himself and to take more interest in his surroundings. He was assigned to work in the occupational therapy classes and as he improved, he worked in one of the outside squads. His improvement continued. He no longer suffered from hallucinations, and appeared to have a fair insight

into his condition. After a hospital residence of one year, one month, and five days, he was paroled from the hospital and discharged a year later.

After leaving the hospital, he stayed at home for some months, until he secured employment for a brief time as night clerk in a hotel. Afterwards, he obtained a better position as clerk in the General Electric Works. He received a promotion about a year ago and was sent to Newark, N. J., where he is now employed as service man for the company. He is happy, and contented in his work, and is striving for a promotion. His family state that at no time since his leaving the hospital has he shown any mental symptoms. He attends moving pictures and occasionally takes girls to dances.

During the three years and four months which has elapsed since his discharge from the hospital, he has worked regularly and for the past year, he has lived in an adjoining state where he seems to have emancipated himself from his family ties. At present, he shows no psychotic symptoms and has insight into his former mental illness.

A study of the 37 cases considered in this paper shows that 9 patients left the hospital after an average hospital residence of 13 months and have adjusted themselves to extramural conditions for an average period of over five years, of which number 6 seem to have recovered while 3 have been able to adjust themselves to a somewhat sheltered environment and may be said to have made a social recovery or recovery with defect; 9 patients died after an average hospital residence of one year and a half, pulmonary tuberculosis being the cause of death in 7 cases; 2 patients were deported to foreign countries in an unimproved condition after an average hospital residence of about seven months; 17 patients, including 1 adjusting poorly to parole conditions, are now receiving intramural care with an average hospital residence of nine years. All of the 17 patients show evidence of deterioration; 9 are idle, impulsive and disturbed; 4 are able to work part of the time in the occupational therapy classes; 2 perform some ward work under supervision, and 2 male patients work part of the time out of doors under supervision.

The results of this study seem to bear out the conclusions of other investigators in this field who are of the opinion that a considerable number of cases of schizophrenia of the catatonic type show an amelioration of their mental condition to the extent that they are able to resume their former places in society.

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## THOUGHT CONTENT IN CATATONIC DEMENTIA PRAECOX

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In reviewing the literature the writer has been unable to find any article pertaining to this particular subject. Perhaps the closest approach was the article written in 1913 by Dr. George H. Kirby, published in the *American Journal of Insanity*, volume 69, page 1035, but in this article there is no attempt at correlation between delusions and conduct.

It is interesting to note that when interviewing patients home on parole or discharged, some thanked the examiner for calling and for the interest the hospital still took in their welfare; others, less numerous and not so well adjusted, resented the call and declined to discuss their former delusions.

As expected some conduct disorders and delusions were more frequently found than others. For example, various types of abnormal sex acts such as masturbation, illicit cohabitations, mixing of races or bestiality were found in practically all cases. One girl thought that when masturbating she was having sexual relations with her father. One male blamed all his trouble to cohabitation with a colored woman. Another patient believed all his trouble was due to his sex life and asked that he be castrated. Another who had become infected with gonorrhea believed that for this reason he could never be cured. (Another patient on the fourth day following her admission here believed that she was in China and had been there for many years.) Another believed that she was surrounded by Chinese who were to use her for immoral purposes.

Three cases denuded themselves.

Another thought that clad in only a night dress she was being driven about in a wagon and that she was to be thrown in a snow bank and that this was being done to her to punish her for her sins, namely, masturbation.

Seven cases entertained very pronounced religious ideas. Two of these believed that they were the Virgin Mary and one believed she had given birth to a baby boy who was to become Christ. (This patient was not married and had no children.) Another patient stated that her real father was Jesus and thought while in the hos-

pital that she was in a holy church. Another thought of the world was coming to an end and all of them believed they would save themselves through religion. Contrary to the writer's expectations only 6 of the 25 cases reviewed thought they were dead. Some believed themselves to be in heaven and others in purgatory. Two of the group had entertained the delusions that they were being chloroformed for immoral sex purposes. Four of the cases entertained ideas concerning fire. Another thought her husband was being burned up in the fire; another thought that the world was burning up and that she was the cause of it. Another thought her fingers were being burned off as punishment for her masturbation. One patient showed many rather peculiar mannerisms in only a partial stupor and later explained this on the basis that she was acting out a wedding ceremony.

About half of the patients had hallucinations, more auditory than visual.

The usual explanation for wetting and soiling was that, "No one seemed to be around to wait on me" or "I was being tortured and I had to do it."

One patient explained his restlessness and impulsive attacks while in the reception building to the fact that a nearby gas station, he thought, was selling gas of a poisonous nature and this gas choked him. They sold this gas cheaper at night, therefore, more people were buying and the more gas they sold the more gas permeated the air and choked him. He saw patients lying in bed whom he thought had been definitely killed by this gas and that some of his intimate friends were being killed and he wanted to get out and protect them. He later admitted that he really saw no dead people.

Another patient believed that the attendants were all thieves because they took his property from him on admission and when he saw them taking the property from other patients this only strengthened his delusion and made him angry. He thought the world should know this so he endeavored to send out messages by wireless and says he did this by rubbing paper against the iron bed, oftentimes, to the extent of taking off the enamel. He further recalled having made many motions and gestures on the porch and in doing this he thought he was directing traffic as a traffic officer.

Two patients swallowed objects, both of them crucifixes and



both admitted later they swallowed these crucifixes to save their souls as they thought they were about to die.

Only one case is reported to have had convulsions but this was not explained.

The following two cases given in more detail were not included in the above findings:

CASE 1: T. C. Admitted November 16, 1922. Born in New Hampshire Aged 17. Attended high school two years. Came to New York State February, 1922, and obtained work as a farm laborer in the vicinity of Schenectady. On September 28, 1922, he was taken to the county hospital as he seemed to be much run down physically. While there he improved and was released on October 15, 1922, to return to the farm where he was employed. On November 14, 1922, he was returned to the county hospital by the farmer who said that the patient had taken a lamp to bed with him and placed it under his left arm and in that way burned his arm and body severely. He told the farmer he had a black heart and that he wanted to burn the devil out of him by killing himself.

While in the county home he tied a sheet around his neck attempting to choke himself and asked for a knife to eat his food with and then tried to kill himself with it. Later put his fingers in his eyes and tried to gouge them out. He told the people in the county home he was doing this because he had done wrong. Told them he had had intercourse with his mother when four years old and that he gave his mother two children while his mother was nursing him in that the mother took his breath and he further claimed that he was father of a litter of puppies because he had had sexual intercourse with a female dog in January, 1921. Claimed to have had intercourse with two cows and as proof of that he saw two calves killed.

Because of his suicidal tendencies he was committed to this hospital and admitted here November 16, 1922. Inasmuch as he was not a legal resident as soon as his self-inflicted burns healed sufficiently he was transferred to the Danvers State Hospital. (April 18, 1923.)

This patient's condition varied somewhat from time to time, that is, on some occasions he seemed very delusional and on other occasions somewhat brighter. The content during his delusional stuporous periods seemed worthwhile reviewing.

At the time of the patient's mental examination he said that at the age of 14 he first realized that he was different from others and this he believed was caused by masturbation and when asked how this affected him he said, "I got worse then and started to do worse things. From 14 to 16 everybody hinted that one of my older brothers was father of my sister Louise

and I knew that meant me. People inferred that I tried to have intercourse with my sister Grace and they tried to shame me to do better. In Seabrook there is a sign against a blacksmith shop and under the sign it said, 'The old man of Seabrook,' and when a woman gave me a dog she said, 'Do you know Norris Previer?' " He said that was another hint because he thought that sign on the wall was an advertisement for Norris Previer. "It was a black dog she gave me. She probably meant to look out or I'd be as black as the dog. This dog later on had puppies by me. The boys around town were boxing and they tried to get me to take some gloves to school. This meant I was to stop playing with myself. They also suggested that I wear boxing gloves at night which was another hint to stop my habits." Whenever he heard the word "dog" mentioned he thought it was a hint for him to correct his habits and to keep away from a black dog. Said, "They had a yellow cat who had kittens. She used to go away and come back and in a little while she would have kittens." When asked what that meant patient said, "Probably some of that stuff in my clothes the cat got and had kittens. I think I was scared all the time because I was hiding it. I was ashamed of myself and those who knew it tried to shame me out of it. To a good many I denied it. I was hiding, lying and running around the country and dodging when I thought they found it out and lying when they faced me with it."

He said he lost his work in New Hampshire and came to New York State to get work here and found work with a farmer and he continued his masturbation habits and, "I spoiled a male dog down there by pulling his private." Asked if it helped, he said, "It didn't benefit me only I took pleasure in it."

He said a fellow he knew in town, "Used to stand around with his mouth open imitating me and all the while I thought he was foolish whereas I was foolish all the time and didn't know it. I never treated anybody right. I haven't treated people here right," and when asked why, he said, "Because I pulled bandages off myself and told lies and didn't keep myself clean. I must have been mad; what I did must have unbalanced my mind."

He then told of a former employer who took him to a sporting house where he had sexual relations with a girl three times in one night. Concerning this he said, "I really did not enjoy it because it wasn't right to do such things. It was only one worse sin. One child is all one woman is supposed to bear and I was with her three times that night and then a man is only supposed to go with his lawful wife."

He said, "Faith, Hope and Love were the three things that make life worth living and they always gave me three to choose from." Asked what these three things meant to him, he said, "They are the three graces; if a

person has Faith nothing is impossible; Hope is the good one sees in the future and Love is that which binds everything together in God." "I have lost my good aims and intentions. I have lost my mind and character and I have lost my self-respect. The river of life should be closed to me because I can't be cleansed in this life. I am decayed, I can't tell you, it is hard to tell you because it doesn't enlighten matters any. I have undone the works of God." Asked what was going to become of him, he said, "It isn't in my hands—yes, it is, but after I die it isn't in my hands." He said he expected to die soon and be buried and leave the earth. "My soul isn't fit for heaven. I don't expect to be with any of my family because I have wronged them." He then spoke of seeing signs and images and pictures out of his window. One was the devil dropping to the bottom of the pit, not the devil but a figure with one horn on his head dropping to the bottom of his pit. "I suppose it meant that was myself" and one horn made him think of his penis.

He said he saw two women leaving the City of Sodom. One looked back and turned to stone, the other kept on going. When asked what that represented said, "One person who looks in the past and remains where he is or it means one person looks around to get one more look at the bad things in his past and will not be able to go on or go back. He can't take his eyes off the flames that burned the evil city, whereas the person who does not look back forgets the past, goes to better places, to better things." He said, "All this is a lesson for me to choose between the two." Asked what the bottomless pit made him think of said, "A person dropping into space, a pit is a hole in the earth, and if there is no bottom to it you keep on going. A pit is a place to be buried—eternity. The opposite to God's eternity, going on forever away from God."

Asked what happened to people in that pit said, "There is a chance for them to come back." How? "The carrot that carries them to the bottomless pit and when they let go of it they arise." Asked what carrot meant said, "The same thing as a person's private, playing with himself."

Again he saw a picture of a negro boy running to a pyramid and running away again. Said, "I was that negro boy and I was as far back as the Egyptians. If I had died then I could have started over again." When asked what a pyramid represented said, "Tomb, a grave." Asked what the shape reminded him of said, "Privates and that is why I didn't take my life then and all the other pictures were just the same." Asked what all this meant said, "Everytime I failed in Christian duty or duty to God I went back in civilization. God gave me one more chance. He gave it to me each time through a picture. I failed and I lost every chance He gave. I hesitated, therefore, failed."

Again he saw a picture of flesh eating Indians. "They were by a lake in the midst of a desert and they were gathered in groups of three waiting for me to do my duty, my duty to God, waiting for me to eat my arm off or something, to kill myself." Asked what the arm represented said, "I bit my right arm first, then the left one. That is the way it showed in the picture. They were all men and all naked and waiting to eat someone. Their arms were outstretched and hands closed and they were stepping back and forth and walking around the lake between the trees and the water. After a while I watched them and they faded away. They floated away and the picture disappeared. If I had done away with myself then I would have had so much longer to sleep. I would have had only the time from when the Indians existed until now, when I could have started my life over again."

Asked if he were in the picture said, "No, I was to eat myself and join the picture. The picture was telling me what to do. They were in the form of triangles—three in a group. The three meant the same as the three-sided pyramid and carrot" and here the patient shouted, "It all means the same thing. Faith, Hope and Love and do what the sign tells you to." Asked what on earth represented Faith, Hope and Love said, "Bible—Faith; church our Hope and the cross of Christ the Love. They are represented by father, mother and child; Father, Son and Holy Ghost." When asked how this applied to him said, "Christ tried to save me, He died to show me the way." Asked if he represented one of the three things mentioned above he replied, "No, I don't, I was made in the image of God and my spirit came from God. I was made like other men." Asked if he was the same as other men said, "No, I am more sinful." Asked what he would have to do to become like other men said, "Purify my body by holding my breath and by being born again in another world."

Asked why he set himself on fire, he said, "I wanted to destroy myself." Why choose fire? "It would leave the least behind. I would leave only ashes and the Bible says, 'Ashes to ashes,' but the Bible don't say destroy yourself." When asked why he attempted it then said, "Oh, oh," and cried and shouted and became quite emotional and finally answered, "Because of my sins, I didn't want to live any longer, I knew it was wrong, I knew it was wrong," Said, "If I drowned while swimming and was buried I wouldn't be here committing more sins." When asked why not start life over said, "Cause all these flies and things may have human blood in them. They may be relation. It is a sin to let them into your body." Other reasons for going to the grave would be to purify the air, "Because the air I breathe out is impure because it smells of matter from my private. I am afraid I will live forever with these insects inside of me." All of these

things worry him and "My brother and rest of the family will have to take part of the shame but now the world knows different." How did the world find out? "They always knew but my family would not tell me I was father to a boy and girl (brother and sister) until I found out I should have known all the time."

Patient claimed that he had intercourse with mother when four years of age and again when seven. Asked if he really wanted to be father of brother and sister, he said, "Yes, I want to remain the father of whatever human beings I am the father of." Asked if he was father of anything other than human beings, he said, "Dogs," and when asked what else, he said, "Come to think of it, with all that matter around the house probably the cat and all the insects got into it and I think I am the father of these animals." (Flies, lice, cats, dogs and a cow.)

At a later interview patient said, "I wasn't half as bad as I made myself out. I didn't do half those things. I only thought I did. I thought I was the father of calves but I wasn't, I haven't any children and I haven't any puppies. I did spoil two male dogs, that is really all I had to feel bad about. I never had intercourse with my mother in my life. I did with my little sister of seven years but my person hardly entered her body. I lit my shirt just below my heart, as I thought it would go to my heart and I would die quick. I thought then it was up to me to die. I read a book in which a man, an awful lot like me, wasn't afraid of anything but fire and at last this man burned up, and I believe that is where the fire idea came from. Black is a sign of darkness. I said I had a black heart, that was just a figure of speech, it meant I had bad thoughts, evil thoughts. He admitted that he had practiced masturbation to excess and that often after leaving a girl he would go home and practice this act.

When questioned about his hallucinations he denied all auditory hallucinations. He explains his visual hallucination of the devil with a horn as a crotch of a tree outside the window and the other pictures as a shadow from the light from the window. Said, "They are just imaginations that is all." He then admitted that he had tried to gouge out his eyes because he thought in that way he would die and said, "During this time I felt very slow, just plain slowness, I was slow to think and slower to act."

Since 14 years of age he had a feeling of guilt and blame it all on his masturbation.

On a later interview patient is reported as being absolutely mute, answering no questions asked of him whatever. Just before being transferred he was asked why he did these things and said, "I was out of sorts and kind of crazy, I worried about people and I have always been making mistakes. I could not hold my positions and I get irritable with people and can't



treat them decent." At one time the patient said he did not speak because God had told him to keep his mouth closed.

After going to Danvers State Hospital the patient continued quite stuporous but at times answered some questions yet the abstract from that institution relates no further interpretation of his delusions.

CASE 2. G. G. Aged 21. Single. Admitted June 22, 1931. An older sister died when one month of age. Patient was born three months after her father's accidental death. The mother never remarried. Previous to admission patient resorted to laughing and crying spells, worried because she was unemployed and threatened to kill herself. She further admitted that she went riding with a boy friend who got fresh and "I got awfully scared. I walked home and prayed all the way home and after that I would not go out with fellows" but she did entertain at her home and because one boy friend did not come to see her she worried, yet, states, "Even though I worried I was happy. I prayed a great deal and I always wanted to see the priest."

Following her admission she entertained many rather absurd delusions which she now explains in the following way: "When anyone played the piano on the ward I saw an act going on," and she now states that she is unable to explain just what it meant but at that time she thought it meant that she was going to heaven. Again she describes what she calls an "appalling scene," when she was surrounded by worms and "I believed at that time I heard a nurse exclaim, 'I feel sorry for her' but at the time it happened a monk seemed to be present who made the above statement."

Again she saw two coaches like covered wagons, each drawn by four horses. She seemed to be in a dance hall, she did not know where. She thought men were in the wagon and the coach almost killed the woman with whom she and her mother boarded. (This the patient would not be expected to explain as it was evidently an unconscious wish to dispose of her boarding mistress.)

Again when some nurses were feeding or giving her attention she thought they acted silly and she did not want them to be with her. Now she says her thoughts were more like dreams or mysterious happenings which are hard to describe. She seemed in a strange locality (during stupor stage) and saw many queer and funny things happening. For instance, she insisted on sitting in the corner on the floor and explained it by saying, "I was going around like a cripple because I was afraid someone from the outside would see me here. I thought they were after me to shoot me, I thought they were men and gangsters. I thought they were around the building at night and every day and night I expected to be shot with a revolver and I hollered and yelled for someone to protect me and pray for me."

"One day I saw a beautiful baby with blond curly hair. It was just outside the building. Someone called it a baby angel and I thought my hair was getting lighter at that time. (Patient brunette.) Again there seemed to be a big war on between Americans and Germans. It seemed real and at that time I thought I was poisoned by some German woman and that I was being filled full of machine oil and auto grease. About this time I saw kerosene burning on the ceiling with streaks of fire running through the ceiling and someone tried to get me behind the wall (evidently nurse trying to place patient in a room) but I wouldn't let them. I believed people around me were from another world and yet I realized that they were nurses as I recognized them by their uniforms but they did not seem human, they seemed more like angels. The nurses seemed to be trying to throw me into the fire and I felt hot and yelled. I thought I swallowed the kerosene lamp and men seemed to be trying to save me from burning so I continued to yell, 'Fire, fire'."

"On another occasion I thought I had been thrown in with a cage of lions and one lion was about to give birth to a baby lion and felt sorry for me and protected me and at this time mass was being said for me so that I would not be afraid of these lions."

"One day some of the patients and nurses seemed to be playing a game and each girl was to get a husband. Two young farmers wanted to pull me away and one looked more handsome than any movie man." She said this man seemed to resemble her former boy friend's friend.

Asked if she ever felt any physical illness at any time, she said, "Yes, I had pain through my body and my side" (pointed to her left side). Said she never heard any such superstition, "But at that time I believed the superstition that if I stepped in manure my pain would stop and then I would marry, so I tried to step in my own manure to cure me and I was to marry the one I liked and after it seemed that he did keep company with me and one night I slept on the floor with him. Frequently at night I would sing and I thought I was singing for the radio or on the stage and was becoming very popular yet everything appeared like shadows."

"At one time Dr. Hutchings seemed to put me in the corner, I thought probably for exercise or something and I remember jumping around like a kid to have fun dancing as I believed for the movie films."

She spoke of heaven, said, "I thought I saw God but God was strict, yet heaven and hell seemed all mixed up. Again I thought I was a saint, again God and then the devil. For this reason I kept looking in the looking glass to find out who I was but I looked strange. There seemed to be an undertaker there and my funeral was taking place. When in heaven I didn't have to work, someone played the piano beautifully and I would

dance. I seemed to be dancing with my boy friend but I know I was just dancing alone. This occurred at night."

"One day there seemed to be an earthquake, the room seemed to be getting smaller, and I tried to get out through the ceiling. I was scared and yelled and I felt the room shaking yet somehow I didn't seem to care much. Previously I thought I heard one of the nurses say I was pregnant so I thought I was going to have a baby to make me well and later on I thought the nurses put me on the bed and took the baby away. I never saw the baby. At the time I thought I had to give lessons on pregnancy to get back my health." Asked how she thought she became pregnant, she said, "I thought my father came from the other world and was the father of my baby and my baby was going to be Jesus Christ and I was the Virgin Mary."

"One day there was a procession and they seemed to be consecrating my room." Asked why her room, she said, "Some monk who had loved me consecrated my room and they told me my sins were clear." She could not remember the name of this monk but said there seemed to be more than one.

Regarding one of her nurses she said, "I liked her, she was so jolly but I thought I never saw a face like hers. I thought she was Jewish." Again the patient said, "I felt I was drowning and hollered and yelled and fought to get out, I was in my room but everything about me was mixed up those days."

Regarding removing her clothes she said, "I thought I had to pose and they were taking my picture or something for the movies. I remember finding myself naked. I was proud of my shape, there seemed to be two former boy friends, some women and girls about but I couldn't see them plainly."

Said she was unable to explain why she wet and soiled. Previous to admission she had run from her home to a hotel. Asked concerning this she said, "My folks at home looked so wild to me that I got scared and ran to the hotel."

When asked why she lay on the floor said, "I thought I was in church and God told me to do so. I thought the devil was tempting me and to lie on the floor my sins would be forgiven."

She was unable to explain why she held food in her mouth so long when spoon-fed. She did remember being forced-fed and now she said, "I thought I was in hell, that I was suffering because I had been a bad girl. I did not think it was to help me at that time."

She remembers considering herself dead. Said, "I saw a picture on the wall going up and down like clouds. One night I thought the nurse was dead and was some kind of a saint and as she sat on my bed I seemed to be suffering so much that I thought I would get into heaven."

Asked why she ran up and down the ward so much said, "I thought a man was after me, I thought the nurse was a man and I got frightened and ran up and down the ward and again I thought everyone was deaf and dumb and they wanted me to run around the ward but more often I thought they wanted to shoot me."

It was thought that the patient's present attitude toward her whole sickness might be of interest so she was asked if she had been mentally ill to which she replied, "Yes, I was half dead, such foolish things I did." When asked as to what she thought the cause of her sickness might be attributed to she replied, "Dear, I don't know, one thing, I worried quite a bit about my health. I had had stomach trouble, at times I took a lot of rest and again I kept very late hours. Stayed out until 2:00 a. m., I would be out with my boy and girl friends, to shows and dances. At home my mother would holler at me because she thought I was lazy and would not work but my work made me nervous. Then I worried some because I had no money for clothes, yet I did not feel well enough to go to work. This resulted in my staying at home alone a great deal of the time and I think that lead up to my illness and finally I thought my girl friends were mean to me and cared more for boy's company. I was afraid of life because of money conditions in the home. I was afraid that my mother and I would not have enough money to live on. I started working in the mill when I was 15 years old and I thought that was bad for my health. My trouble seemed to be all caused from worrying and not taking care of myself properly. I wasn't very strong."

She was then asked in looking back on her whole sickness what she thought of it at the present time and she replied, "It seemed as if they locked me in prison. I thought I had been here for my conduct and felt as if I had been away from life. I never felt like that before. It was probably like a nervous breakdown or something. It seemed like the end of the world and I felt stupid and thought I would never be myself again. I was so dizzy then that I couldn't help myself. I enjoyed having plenty of rest and that seemed to make me happy but when you are sick you can't remember. It seems as if I had awakened from a sleep when I got well."

When asked what helped her most to recover she replied, "Rest, sleep, more company here than at home, regular meals and lastly being away from my mother and not hearing her holler or having to worry about her health."

In making a study of this character one is more firmly impressed with the idea that we study our patients too superficially to understand fully the motives for their bizarre conduct. Some stupor reactions seem quite closely associated with primitive life manifes-

tations as described by Levy-Bruhl.<sup>2</sup> in "Primitive Mentality" or as elaborated upon by Frazier<sup>3</sup> in his "Golden Bough." The understanding of motives seems essential in the care and treatment of these cases and one questions if we would not be justified in administering such drugs as sodium amytal, carbon dioxide or oxygen during definite stupors. If in this way we can release their delusions and by so doing guide the patient to a better understanding of his trends, we might postulate that the course of his psychosis would be shortened and the patient benefited by such a procedure.

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## A STUDY OF THE PERSONALITY IN PERSONS DEVELOPING CATATONIC DEMENTIA PRAECOX\*

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In this study of the personality in persons developing catatonic dementia praecox, 154 unselected cases were studied from the records of the Buffalo State Hospital. In the main, they covered cases that were in the hospital from 1926 to 1932, a few from earlier years and many who were in their second and third admission.

In the approach to the personality, environmental and hereditary factors were not stressed, except where it was evident that they had either a direct bearing on the personality or exerted a marked influence on early development.

In the classification of the various types of personality the outline given in the Statistical Guide was followed wherever feasible. No attempt was made to form new classifications but rather to fit the data obtained into one or more of the recognized classes in the Guide. As the Guide gives no classification for normal behavior, the term, "No striking traits" is used partly because some of the data give only that information, or indicate in conjunction with other descriptions that the traits may be considered normal or approaching normal for that individual. However, the group designated as "No striking traits" is further analyzed into the component parts. In the segregation of the other types of personality the most striking characteristic was usually utilized except in the cases of seclusiveness, which was divided into two main groups; (1) seclusive, where the main and outstanding feature was seclusiveness; and (2) seclusiveness with other characteristics, when the other traits were of sufficient importance to require separate classification. It was found that the cases listed under irritability as the characteristic, also required some differentiation as other traits combined with the irritability were much in evidence.

As the object of the paper is statistical it was deemed wiser to digest the data accumulated and give facts in classifications rather than to quote the individual personality descriptions in every case. However, for the sake of clearness an occasional description is

\* Read at the Interhospital Conference, Utica State Hospital, April 27, 1932.

given more as a type description or to illustrate some point in heredity or environment.

In the analysis of the 154 cases, seclusiveness and seclusiveness with other traits formed the greater part numbering 86 cases or 55.9 per cent of the total. The gross figures for all classes were:

TABLE 1. TRAITS OF PERSONS DEVELOPING CATATONIC DEMENTIA PRÆCOX

	Number	Percent
Seclusiveness .....	70	45.5
Seclusiveness with other traits .....	16	10.4
Overactivity .....	8	5.2
Depressive .....	7	4.5
Unstable .....	7	4.5
Suspicious .....	1	0.7
Irritability .....	12	7.8
Sex abnormality .....	3	1.9
Criminalistic .....	1	0.7
No striking traits .....	29	18.8
Total .....	154	100.0

In the data on seclusive cases statements were very definite and offered little chance for misinterpretation. Many statements were to the fact that the patient had always been different from the other members of the family, and except in cases with mental deficiency they were often described as extremely good children, never giving any trouble either at home or in school. As a rule they did not form problem children, or at least were not regarded as problems, rather as model "little ladies or gentlemen." A few typical descriptions are:

"W. G. Always seclusive, never entered into conversation unless spoken to first. Did not mix with other girls, had few friends, did not care for sports. Brother psychotic, manic-depressive, manic."

"L. G. Always quiet, never mixed much with other people. At times he would be at home for periods of time without the family being aware of his presence. Never cared for women."

"C. I. Always quiet and seclusive, no interest in opposite sex. When urged by family to get married as other members of the family he stated, 'he would take care of mother'."

The group seclusiveness with other traits showed enough variation to require further subdivision. The accompanying traits while present were not sufficiently stressed so as to require inclusion in

other classification but rather regarded as the sub-grouping of seclusiveness. Of the 16 cases designated seclusive with other traits, classification was as follows:

TABLE 2. TRAITS ACCOMPANYING SECLUSIVENESS

1. With irritability .....	9
2. Egotistical and jealous .....	1
3. Depressive, egotistical and some irritability.....	1
4. With depression .....	1
5. Unstable and suspicious .....	4
	—
Total .....	16

As is seen from this table, irritability combined with seclusiveness and other traits predominates. In these cases irritability is usually described as fits of temper rather than a continued irritability. This is also seen when the data on the 12 cases described as irritable are examined. In 9 of these cases, unsteadiness with fits of violent temper predominate. The remaining 3 were described as merely irritable suggesting a defense for the seclusiveness. When the groups that have irritability as one of the characteristics either predominating or secondary, are combined they total 21, or 13.6 per cent of the entire series, or second largest group of the psychopathic traits.

An example of irritability is seen in the following case:

"*F. B.* This patient was always restless, changed frequently from one job to another, was sensitive about remarks, would frequently become cross and irritable, was suspicious of those about him; resented interference or instruction, was easily discouraged; did not care for the opposite sex and would easily fly into fits of rage when disturbed."

The group approaching normal behavior ("No striking traits") numbered 29. Of these, 17 were so designated in the records without any qualifying remarks. The 12 with other traits were designated in the records as sociable, good mixers, "life of the party," "made friends easily," but the heterosexual drive was not marked. One of these cases was diagnosed manic on a previous admission. The impression was gained from the group approaching normal behavior and the group approaching syntoid personality that the reactions were not typical, would not continue in the same manner

for long periods of time, and that later, even long before the onset of the psychosis, there would be an abatement of the activities.

Examples are as follows:

"J. A. This patient was the smallest of the family and was over-protected by the mother. Was brightest of all the children, stood highest in her class in school. Was the life of the party, sociable. On leaving school she began changing jobs regularly, stating she was tired. While she appeared to give satisfaction at her work, would not care to continue in the same position. After her marriage she took less and less interest in her housework, so much so that her husband finally did the cooking."

"D. C. Described as having no striking traits all his life. Appendectomy precipitated his psychosis."

The groups designated as overactive, unstable and depressive, appear in small numbers. Suspiciousness is evidently not a striking trait, being described as the outstanding trait in only one case. Also egotism, not described in any case is either an under-developed trait or at least not manifested outwardly by the majority of cases. Direct evidence of sex abnormality, not including delinquency or passive sexuality, was described in three cases as frank homosexuality. One case showed criminalistic tendencies. He had spent some time at Auburn and Dannemora. Alcoholism appeared as a secondary trait in only 10 cases. Six of these were found in the group designated as seclusive, one in the depressive, one in the unstable and two under "No striking traits."

#### SUMMARY

1. Seclusiveness and seclusiveness with other traits considering seclusiveness the predominating characteristic, forms the bulk of cases numbering 86, or 55.9 per cent of the total.

2. Irritability considered alone appears in 12, or 7.8 per cent of the cases, and if the cases showing irritability as both primary and secondary characteristics are combined they number 21, and constitute the third largest group in the series. This irritability is most commonly described as fits of violent temper.

3. Cases with behavior approaching normal comprise 29, or 18.8 per cent of the total. Such behavior was shallow and did not conform truly to normal types.

## THOUGHT CONTENT IN CATATONIC DEMENTIA PRAECOX\*

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This study is based upon the case records of 100 patients admitted to the Hudson River State Hospital, the majority of them having entered the hospital from 1927 to 1931, and all having been finally and definitely diagnosed as dementia praecox, catatonic. The thought content was determined, not alone by its expression as recorded during hospital residence, but also as reported by various observers prior to admission. In 7 of these 100 cases there was no record of thought content, due to mutism of patient during hospital residence and absence of any account prior to admission.

The ideas constituting the thought content in these cases may be arranged according to the frequency of their occurrence, as follows: Ideas expressing fear were present in 48 cases. These may be subdivided, as follows: Fear of being killed 18, vague fears of something indefinite 15, of castration 10, of homo-sexuality 6; 5 showed an acute homo-sexual panic, 3 of them making impulsive suicidal attempts; fear of the father 5, of being buried alive 5, of men 5, of germs and poison 4, of fire 3, and in 1 each the fear was associated with ideas concerning negroes, hell, people entering the room and needles entering the body. Auditory hallucinations occurred in 42 of the cases. They were accusatory of fellatio in 18 of the male patients and in 2 of the female. Three heard themselves called bad girl or woman, and in 2 the voices called them insane, 5 heard messages of guidance from the Lord, 3 were threats of being killed, 2 were communications with the father surrogate. In 1 the Lord ordered the patient to kill himself, and in 1 the sound heard was that of water. In 5 the content of the hallucinations was unknown. In 36 of the cases incestuous ideas were expressed, and in 29 of the cases ideas of death were present. This does not include the fear of being killed or buried alive, which are included under the ideas accompanied by fear. In 6 of the cases there were ideas of rebirth. In 5, ideas of being in or near water were recorded, while in 3 ideas of being in heaven were mentioned. Grandi-

\* Read at the Interhospital Conference, Psychiatric Institute and Hospital, April 20, 1932



ose ideas occurred in 15, ideas of sin and self-accusation were present in 9. In 9 the thought content expressed a denial of marriage including ideas of death or infidelity of the mate.. Ideas of reference were recorded in 5 cases, ideas of syphilis in 5, ideas of prostitution in 2, ideas of mind reading in 3, of being cursed by God 2, and in 1 the idea was expressed that radio was affecting the genitals, and in another 1 the thought was mentioned that announcement was broadcast that the patient was physically unfit. In 5 of the cases identification with God, and in 5 identification with Christ were definitely expressed. In 3 of the cases identification with the father was expressed, in 1 antagonism to the father, and in 1 identification with the mother. This group in which identification is mentioned consisted entirely of male patients. In 3 of the cases ideas of being affected by electricity and spears were mentioned. Visual hallucinations were present in 5 of the cases; of these, 2 saw visions of the dead parent coming to take patient away, in 1 death appeared at the window with a scythe; the remaining 2 saw snakes, and in one of them the patient shouted in extreme excitement, asking that the snake be taken away from his mouth. As previously mentioned, in 7 no thought content was recorded.

Ideas of death were expressed both in the excited phase and just before the onset of the stupor; for example, in one case during excitement the idea was expressed that the patient's father and brother were choked to death, that she was later choked to death but brought back to life by a doctor. Another patient, just before she entered into a mute catatonic phase, said, "I am with the angels now, I am in heaven—everybody is here." This patient's father died one month before the onset of her illness.

Incest ideas were expressed in various ways. In one case the patient communicated with a deceased sister, and she told him that he was going to her. Another patient said that he came to the hospital to be killed for sexual wrong to his sister, at the same time expressing the idea of castration, and saying "I will be dead if I eat the forbidden fruit—death will bring me to another cross." He also spoke about God taking out his tongue and he explained his mutism as a command from God not to talk. Another patient, during an excited, overtalkative state, spoke about her father and a baby, and during the mute period one said: "Papa—I want

papa." Another patient said she was married to an elderly doctor with whom she had hallucinatory communications. Another patient expressed openly that she had intercourse with God, and insisted that her child's name should have been Jesus, at the same time she had the delusion that her husband was strangled and that her little girl went to heaven. This case was precipitated by childbirth.

Castration was expressed in the thought content both openly and symbolically. One patient said that an operation for appendicitis changed him from a man to a woman and described it as "sterilization." This same patient heard voices accusing him of homo-sexuality and he also developed a compensatory trend in which he represented himself as a reformer. Another patient, who maintained rigid postures and made the sign of the cross said he had been framed and was going to lose his arm and his leg. Another case cut his finger and expressed the idea that a boarder had attempted to kill him by cutting off his fingers. He also said that some of the boarders looked like his father who was cruel to him. Another patient, while listening to the description of a prize fight over the radio, became very much excited and said he was going to be butchered by the boys, he thought he was going to be "castrated." This patient said he had part of his father's disposition and part of his mother's, but after his birthday (he was 21) he would have only his mother's and then would be all right. In the hospital he showed his homo-sexual tendency, asking the attendants to kiss him; he also burned his penis on the radiator.

The cases presenting a pronounced homo-sexual panic expressed the belief that men were following them to shoot them, in one case the alleged persecutor was evidently a father surrogate. One patient who had a previous admission, during which he showed marked fear and agitation, and expressed worry about masturbation was recently readmitted to the hospital and on this occasion, in addition to a general catatonic attitude, held his hands so tightly flexed that the nails had penetrated into the palm, probably a protective attitude against masturbation.

In the stupor cases unfortunately very little of the content of thought is recorded. Of these, ideas of death are the most prominent. In some cases it is merely recorded that the patient ex-

pressed the belief at the onset of the stupor that he or she was going to die. Some expressed the fear of being buried alive. One patient subsequently explained that during the stupor he could not move or speak, that all he could do was to hear. This description would seem to indicate that the stupor was a protective mechanism, a feigned-death reaction to fear. This same patient thought he heard the funeral march and that his coffin was being made for him. His chief fear was that they might think he was dead and bury him alive. He also thought that he was going to be drowned when he was given a bath. He had dreams in which he stabbed his father.

There is one case, however, which gives a detailed account retrospectively of a recent and also previous period of stupor. For this reason the writer feels that a more detailed account of the case is appropriate. This patient is a man of 35, a minister, admitted to the Hudson River State Hospital December 5, 1930. The history of the case is based entirely on the patient's own account, since he had no relatives or friends living in this country. After several months of typical catatonic stupor, the patient showed a remission and gave a retrospective account of the stupor. During that period he thought he was four feet under water and had thoughts that he was a woman. He had thoughts of his mother which told him of the difficulties at his birth because of his position in her body. He also believed that he was being reborn within himself. The movements of his bowels made him feel that the movements were due to pregnancy. The patient also incidentally suggested, at the time of his recital, that patients in the hospital could be cured by having them stand up and having their bowels move, explaining that they might thus be purged of their sins. This evidently is a rebirth idea, and clearly shows that the idea of rebirth to him is purification of sin. He said that the Lord had cleansed his abdomen; in fact, throughout his account he expresses the belief that the Lord accomplishes everything and that he must not give credit to anyone but God, who dominates all his activities. He feels compelled to comply with the wishes of God above everything else. From time to time, while giving the account, he hesitated in a listening attitude and replied "The Lord Himself tells me He did it." The patient expressed a deep attachment to his father and that this

love of the earthly father grew with the attachment to the heavenly father, developed by his vocation as a minister. He expressed a feeling of hate toward his mother which he said was present in his childhood. He is the oldest male child by his father's second marriage. The sins which he referred to were masturbation, which began at 16, and has since continued, and also when he was 16 sex intimacies on two occasions with his sister, four years older, to whom he was much attached. He studied for the ministry upon her suggestion. At a hospital in Canada where he had had a previous attack of typical catatonic stupor, he related his experiences as follows: "I will start back about six weeks before I took sick. When I was through with my work I sometimes felt hot in my mouth. At that time I could not explain it—I felt a little bit queer, a little bit twisted in my body. I remember all the things that were going on and can recall things real well. I felt no pain. One day after dinner I was taken to the police station and interviewed by a doctor, then brought to the sanitarium." After enumerating other details he continued, "About June 13 I fell into this trance, I could hardly speak and I quit speaking altogether on the 10th of September. I felt tired and weak, felt a little fever and pain in the back of my head, it was most painful when I got cold sponges on the head. I tried to cooperate as well as I could. I was handled like a child, I could not open my teeth and was fed." In speaking about some friends who visited him at the sanitarium, he said "I noticed them; I knew who they were but I could not respond to them. I could really see through my skin. It was that way all through the trance, I could not open my jaws, I could not think they could be opened. About four weeks before I opened my eyes and started to speak I felt fluid coming down through my thumb, then my feet; I could almost count every part of my body." Then the patient described pictures which he saw during that time, pictures of people he had known during his life, which came so rapidly he could not recall them. He called them pictures of memory, all the things he had seen during his life, that is, pictures of actual events, also of things he had read. At this point the patient expressed himself as wondering if other people might not be able to photograph his thoughts. He also gave a detailed description of his coming out of the stupor and told how he started to walk again

and how he took water from the tap in the palm of his hand for the first time, and gradually took a little more each day, and started to walk more and more, and how his speech returned at first with difficulty. His description was somewhat suggestive of the gradual development of the infant. When the patient gave his retrospective account in this hospital he felt that he was cleansed of his impurities and that God was directing him and was giving him the mission to save people.

This case illustrated well the clearness of spontaneous memory, in contradistinction to the amnesia or clouding in the retrospective account of benign stupor patients. However, the thought content, in so far as it presents ideas of being under water, and rebirth with consequent cleansing of sin corresponds with that observed in the benign stupor group.

Recently a patient was admitted to the Hudson River State Hospital who developed an acute excitement of manic-like nature, but whose history reveals that he had an attack of six months' duration seven years ago, which was diagnosed as dementia præcox, catatonic. A few weeks ago there was an abrupt subsidence of his excitement, and he suddenly assumed a catatonic attitude and became mute for several days, after which he had a partial remission of symptoms and he then retrospectively told of his thought content during the stupor. He felt as though he were under water and that in looking through the window it gave him the impression that he was inside of a submarine. He also stated that he was breathing synchronously with his mother and that his heart beats corresponded to hers.

Another case will be given in some detail as an example of the thought content noted in catatonic excitement. This patient expressed freely the hallucinatory messages which she received, and also her answers to them, so that the full content of her thought could be easily obtained.

This patient is a woman who was admitted to the Hudson River State Hospital in December, 1929, at the age of 20. She was married in August, 1929, and on November 16, 1929, gave birth to a child which died one-half hour later. Puerperium was normal until three weeks later when, on her way to do some shopping with her mother, they passed the cemetery where her child was buried and stopped to talk with a woman wheeling a baby carriage. The psychosis started that night after returning home. The



patient became excited and noisy, prayed constantly and talked about people punishing her. She said that her father was dead, and thought that the cars that passed the house belonged to the doctors and undertakers. She shouted "Let me die—don't bury me alive—don't torture me." The ideas of guilt that disturbed this patient were easily determined during her residence at the hospital because she repeated aloud her accusatory trend, just as though another individual were telling her directly what she had done. Besides the pre-marital sex relations which had occurred in the cemetery where her child was buried, and which she passed the day of the onset of her psychosis, her husband had also forced her to perform fellatio during the latter part of her pregnancy. In the beginning of her psychosis she said her house burned down, probably a purification idea, and she tore up the bedding, thus destroying the site of her acts of guilt. She said she wanted to be remarried and that the marriage ceremony was too short, meaning that the duration of marriage was too short to result in childbirth. She also claimed that her husband's folks said she was dirty and did not keep her house clean. This, no doubt, refers to her body. In order to relieve herself of the pain of these thoughts of guilt, she projects the faults on others and becomes the object of persecution, claiming that electricity was put in her body and that aeroplanes were made to annoy her. She developed a religious trend, said her father became St. Anthony. She spoke about dead people being brought into her home and spoke of coffins and of dying. In this hospital she expressed the idea that when she was taken to Grasslands Hospital she had gone to heaven, speaking of the building being high up on a hill. She spoke about her ride to the hospital as a ride in the death car. To mask further the personal elements of the situation she invented a religious war, spoke about the war between the Jews and the Catholics, and she identified her mother as associated with the Jews, while she belonged to the opposite group. In this hospital she expressed the delusion that one of the nurses had thrown her mother down a flight of stairs. The religious war brings an end to the world, and she is the first lady of the land, in the renovated world. The patient seemed to associate the end of the world with the end of the year and the change of the calendar seemed to precipitate the idea that a new world had been formed. Patient denied her marriage name, and gave her maiden name and said that her husband was keeping company with some other girl. She also said that the attendants were wearing her jewelry, her marriage ring. Throughout the period of her excitement the patient was described as very fearful. She showed suspiciousness and misinterpreted her environment. She called the writer Father Meehan. She happened to look at a calendar which bore the picture of a reindeer and commented "That is what Francis is." When

asked what prompted her to associate her husband with a picture of the deer, she mentioned the horns, and when asked what that meant, said the devil. Her feeling of guilt readily aroused suspicions of the significance of what she saw; for example, a box of cream puffs brought forth the thought of poisoned cream puffs which apparently activated a feeling of guilt concerning fellatio, and when asked why she thought they were poisoned, her answer indicated that the death of the baby was probably associated with this thought. Also indicative of her marked feeling of guilt was her comment that she did not know that that talk was going on in the papers (referring to the perversion). She got up and picked up the newspaper which was lying on the bed and looked at it. The excitement in this case subsided and the patient had a partial remission of her symptoms and was paroled, but was recently returned to the hospital in a mute condition, showing disorder of conduct and emotions which definitely points to a diagnosis of catatonic dementia præcox, although the first attack of excitement closely simulated a manic state. This patient showed definite shut-in personality and was much indulged in by her father. The ideas expressed in the psychosis indicate clearly an electra situation.

Here again we see presented a thought content, definitely expressing ideas of death and heaven and purification through fire and rebirth, this time in a setting of excitement and apprehension but otherwise differing from the benign group in personality and in occasional inappropriateness of conduct and affect, which, however, is beyond the boundaries of this discussion.

#### CONCLUSION AND COMMENTS

In reviewing the above mentioned group of 100 cases of catatonic dementia præcox, the writer was impressed with the prominence of ideas relative to perverse and tabooed sexuality, also the frequency of ideas of death and its related ideas of rebirth and finally the frequency of the association of fear in connection with these ideas.

The rôle of incestuous and homosexual wishes and their expression in the trends of dementia præcox cases of all types has been emphasized, as e. g., by Hutchings, Wright and Cheney, and accordingly appears prominently in the catatonic group.

The frequency with which ideas of death and rebirth, such as Hoch described in benign stupor, appeared in this group would indicate that their occurrence per se in the thought content is no absolute criterion of benignity.

Finally, the association of fear in the thought content of catatonic cases offers an interesting field for speculation. Kempf considers the chronic catatonic dissociation as an adaptation or adjustment to a cause of fear and sexual excitement. Amsden, in discussing the personality of catatonic dementia præcox cases, noted that in half of them the most prominent feature is that of being fearful or easily frightened. Considered as a psychobiological reaction, the attitude and manifestations of catatonia suggest a feigned death reaction to fear, an inferior type of response; and the mental picture suggests a similar mechanism, a resort to death as the solution of difficulties, thus accomplishing a blissful state of freedom from cares in which tabooed cravings are no longer a source of conflict. The catatonic excitement may be an abandonment to these cravings or a struggle against them, the cravings often being expressed by projection.

## OBSERVATIONS IN CATATONIA WITH MIXTURES OF CARBON DIOXIDE AND OXYGEN\*

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This work was begun seven months ago to investigate further the effects and possibilities offered with mixtures of carbon dioxide and oxygen, administered by inhalation at regular intervals, for a prolonged period. Following the method of Solomon, D'Elseaux and Kaufman, the percentages used were 60 and 40. The only apparatus available for this purpose at the time, was a McKesson anaesthetic machine which allowed only for an approximation to the percentage desired. Using the same apparatus and in the same manner, an attempt was made to make up for a lack of accuracy by constancy in the technique.

Since little exact knowledge was available as to the details of the method and possible untoward reactions, it was necessary to proceed with exceptional precautions. Only patients who were in excellent health and with no organic disease were selected. The inhalation was given in the morning, breakfast was omitted and the bowel emptied; medication and procedures necessary for shock treatment were prepared in advance. As the work progressed, these precautions were relaxed so that only a syringe containing adrenalin and a long and short needle were kept in readiness, the longer one to be used in case intra-cardiac injection was desired.

Only once in 163 treatments did any untoward incident occur. One patient, a 23-year-old female, reacted in the usual manner to her first inhalation, but, following one and one-half minutes of the second treatment respiration ceased and she became very limp, pallid, cold and clammy. Her pulse could not be obtained. After four minutes of artificial respiration, breathing began and the pulse became perceptible two minutes later, three minutes after ten minims of adrenalin had been administered subcutaneously. This patient's tolerance always has been less than that of any of the others, although, with further treatments the duration of the inhalation could be prolonged.

In this series, several patients, psychotic for a rather long period, were included. One of these was the first patient to receive treat-

\* Read at the Interhospital Conference, Psychiatric Institute and Hospital, April 20, 1932.

ment. She was a 45-year-old married female, ill 14 years, originally diagnosed manic-depressive, depressed type, although paroled once, was never completely recovered. The diagnosis at the time of her treatment was dementia præcox, catatonic type, and she had been mute about three years. Only the productions in her lucid state will be mentioned now: The first few minutes she produced nothing but a childish babble. She then spontaneously said, "Oh, doctor," several times, relevantly answered questions with "yes" or "no" and smiled in an appropriate manner. She also seemed to be making attempts to answer like a patient with motor aphasia. After 15 minutes she was again inaccessible. During the week her condition seemed slightly improved and treatment was repeated with practically the same results. Given a pencil this time, she wrote her name very rapidly and in a somewhat childish style. No further treatments were given because of the evident deterioration exhibited during her lucid state. At present, six months later, her condition has further improved. Although, still inaccessible, she no longer wets or soils, does not require tube feeding, keeps her eyes open, is much more flexible and obeys commands to a slight extent.

The second patient with a long history is a 27-year-old female, married between her third and fourth attack, diagnosed manic-depressive, circular type, at present exhibiting symptoms very suggestive of catatonia, with phases of stupor and excitement. Only after her third attack was she discharged as recovered and remained so for eight months. The last attack is already of 18 months' duration. For the last five months of this period she was excited and then lapsed into a typical catatonic stupor, having been tube fed for practically this whole period. It was noticed that for three days previous she had been alternating between stupor and slight restlessness but was still mute. On seeing the anaesthetic machine she said, "I don't want an operation. What did you bring me here for?" She was controlled only with considerable difficulty. The lucid state lasted only 15 minutes, during the first two of which she screamed and moved around as if intoxicated, and then answered questions relevantly and in long sentences, persistently requesting to be allowed to leave the room. She used the key given her correctly and once outside refused to return. Up to



the present, seven months later, the picture has been one of catatonic excitement, except for eight days of stupor two months ago.

A 21-year-old single female still under treatment is another case with a long history. The diagnosis during the seven years of her psychosis always has been dementia præcox, catatonic type. Although paroled several times, her improvement has never been very great at any time. She has shown frequent fluctuations between stupor and excitement. After two weeks of mutism and tube feeding, following her return from parole, it was hoped that treatment might result in a desire to eat normally, a frequent finding among the other treated patients. This favorable result was obtained following one treatment. There has been no difficulty in this direction since then. Because of this, treatments have been continued and to date she has received eight, being now moderately improved. She is in very good contact now. However, during her lucid intervals and between the inhalations she exhibits very obvious schizophasia. At present, whenever she sees the examiner, she hides under the bed, but on the appointed day for treatment always awaits him anxiously to explain at great length that he has confused her with another patient to whom she attributes her name, and states that that patient is the one to be choked. She always complains that the physician is trying to choke her to death, this delusion arising from the suffocating sensation of which most of the patients complain.

The last case of any length to be mentioned in detail is that of a 24-year-old single female whose psychosis began very insidiously about four years ago. (Two cases with durations of 30 and 26 months respectively, will be discussed in general with the other cases.) Her diagnosis always has been dementia præcox, catatonic type, for the last three years of which she has been mute. Following her first inhalation she was lucid about seven minutes and spontaneously stated, "I feel so good. I am alive. I have more confidence now. I must have been dreaming. It was a nice dream, but most embarrassing." She appeared very happy and moved her fingers as though playing the piano. To most questions she remained indifferent, but did know and offered spontaneously the names of two of the staff present, although mute and seemingly out of contact since admission. After several treatments she was

asked to write her name and address. Before inhalation her writing was very small and there were many corrections; during the lucid period it was quite neat and all of the letters of the same size and of moderate height. A marked difference in the handwriting has been noticed with all of the patients before and after treatment. Following the omission of the inhalation for one week she seemed to have become worse. Much the same effect had been noticed in two other patients when their treatments had been omitted for several weeks. After 13 treatments this patient was only moderately improved and seemed still to show so much personality deterioration that the inhalations were discontinued, since so little could be expected.

The remarkable constancy of the reaction which all patients exhibited to the inhalations, is indeed, noteworthy. With the exception above mentioned, the gas mixture was given in all cases from one and one-half to two minutes. The mask was removed when respiration became irregular, heart action poor, pupils widely dilated, or the extremities suddenly limp. In fact, when the picture of fourth stage anaesthesia became evident.

Four patients, on more than one occasion, said that they had enjoyed the sensation produced and wanted it repeated. Two actually put on the mask of their own accord when they felt the effects wearing off. Almost all remarked that it gave them the sensation of flying and often they simulated this activity by waving their hands. The complaint of buzzing, roaring or noises in the head was almost general and often interpreted as a victrola playing, people singing, shouting or just talking. Eight were bothered excessively by a sensation of dryness in the mouth and continued to expectorate from five to ten minutes. Four became terrified each time because they felt as if they were being choked. An equal number, who, at some time had the delusion that they were to be killed or poisoned and who were still quite inaccessible between treatments, would begin to talk most volubly just before treatment or as they were being put on the table. As above mentioned, one patient usually very fearful, became quite affable and talkative on the appointed day. Very frequently, during the lucid interval or shortly before another treatment, some patients would make various promises in order to avoid any further inhalations, but immediately for-

got them, once out of the room. With others it proved a valuable therapeutic aid. It seemed possible that the power of the fear reaction was the drive which brought these patients out of their seclusion.

Most patients held their breath in the early part of the first treatment. A few continued to do this with every inhalation. Where breathing was regular and deep from the start, relaxation was complete in 15 seconds, and in none of the cases would it take more than 30 seconds. The pupils became dilated, remaining so from 5 to 15 minutes, and often exhibited hippus. Only in three did subsequent marked contraction occur. The first tremors were gross and began in the knees, but often fibrillary twitchings of the lower eyelids or tremors of the fingers marked the onset. The picture then changed to one of tetany with the feet and toes in extreme plantar flexion and the hands in carpopedal spasm. At about one minute the tremors became very gross, involving the trunk, with the extremities describing sudden, irregular, jerky motions. With great frequency, coitus-like positions and manoeuvres, as well as motions resembling an attempt at protection against assault, were evident. The former attitudes often persisted after the inhalation ceased, with the facial expression being one of ecstasy and the state very suggestive of orgasm. These latter states could not be altered for many minutes, even with persistent and considerable external intervention. Associated with the defense movements there was often a terrific fear reaction. The mimetic muscles became more rigid, an expression of horror with an associated circumoral greenish-yellow hue frequently appearing. Marked transitory exophthalmos was common, as well as screaming, retraction of the head or attempted flight on the part of the patient. Toward the end of the inhalation, the thyroid became quite prominent with associated blotchiness of the neck and face, varying from simple erythema to marked cyanosis. This passed off in from five to ten minutes. Three patients, however, were blue following all inhalations. A few exhibited marked sweating of the face and trunk. On just one occasion did a patient bite her tongue and then only slightly. Only on six occasions was there blood streaked saliva evident, as a result of biting of the cheek. Urinary incontinence occurred 20 times, mainly in

three patients. Loss of bowel control occurred once and then amounted to only a spotting.

In from one to three minutes the patient became lucid and talked spontaneously, or answered questions in addition, from 4 to 20 minutes. However, retardation became evident toward the end of this period, ending in muteness or that state of contact already attained following the previous treatment. During this lucid state it was possible to obtain some insight into the patient's mental status, at the same time stimulating her emotionally and attempting to begin re-education.

A thorough knowledge of the psychosis, as well as of the patient's previous life, was useful and essential. Following the first inhalation, patients frequently talked about or enacted a very pleasurable, actual or phantasied, situation, usually from their early life. With further treatment, later periods were added until, with continuous good contact, the memory had been brought up to the onset of the psychosis and often included events occurring during that period. A slightly different reaction was noted in two manic-depressives, depressed type. One, a single girl of 23, mute for three weeks, with many features both of catatonia and depression, in her lucid state was overwhelmed when she felt that she had a real body and feelings. The other, a married female of 48 with a history of three attacks, typically of the depressed type, much retarded, though still in fair contact, remarked how foolish she had been in believing her nihilistic ideas as well as her ideas of unreality.

In the lucid period following the first treatment, the patient was allowed ample time to express herself, and was only interrupted to be questioned concerning possible somatic ailments that should be cared for. Subsequently, the patient's remote and recent memory was probed, as well as her emotional status and her desires for the present and future. At the same time, particularly where stupor had been prolonged, a process of re-education was begun. Simple facts of orientation were offered and gradually information was given or requested concerning the affective situations which may have been operative in the causation of the psychosis so far as could be determined. An attempt to exact promises from the patient was frequently made and often this was of help in furthering her recovery by a continued and better cooperation between treat-

ments. In one case the parent was present during the lucid state and helped considerably in reassuring the somewhat fearful patient. It was noted that the patients first talked with their visitors when recovery was beginning, and only somewhat later was the physician able to make contact. It was always of advantage to visit the patients while their friends were present. Once in contact the author could use his influence to put himself in a better light as many patients developed mild trends against him.

As the work progressed, further investigation into the history of those patients who were improving more rapidly, seemed to indicate a possible basis for the choice of new cases for treatment. Although the series is small, such criteria seemed to suggest themselves. We regarded as favorable the following: (1) the age of the patient arbitrarily below 28; (2) a case coming to our attention early in the illness with the stupor being of recent onset; (3) a high intellectual endowment; (4) and a personality not typically schizoid, i. e., a patient who had been very seclusive about her own affairs but was of a cheerful disposition and had many friends, or a patient who was seclusive, with few friends, but had always unburdened herself to her parents or to one of the family; (5) the occurrence, following the first treatment, of a very talkative, lucid period, in which no disturbances of thought or speech were exhibited. The outstanding unfavorable characteristic was negativism during the psychosis or extreme stubbornness and irritability in the patient's personality make-up.

Arbitrarily, it was decided that the treatment should be given once weekly, the economic factor also being important, and as yet, we cannot definitely state that the process is entirely innocuous. The intervening period also allowed for the institution of other forms of therapy. From the very beginning the occupational therapy department was used to the fullest advantage. These patients always were brought to the dances and sent on walks as soon as possible. The nurses on the wards were instructed to walk these patients around the ward several times a day. The author saw these patients several times daily during the entire course of their treatment. The very fact that so much attention was directed toward these patients is significant and must be considered as one of the main factors leading to their improvement.



Disregarding the case of chronic stupor, which had received two treatments, and the other, which had received only one and then went into a state of catatonic excitement, the remaining 13 cases have all shown improvement of varying degree. Actually, these first two might also be considered as benefited. For purposes of control, treatment was omitted for two weeks in three cases not yet in good contact. A similar trial was again made when these cases were further progressed but not yet considered as well enough to have treatment discontinued. The same result was obtained, viz.: that regression always took place. Once the patient seemed to be in good and continuous contact with the environment, treatment was omitted for economic reasons and because it seemed that little further could be expected from it. Besides, this treatment might not be entirely innocuous and most of the patients who had shown considerable improvement began to complain of its disagreeable nature.

At present, 11 cases are under treatment, two others having been discontinued after a rather prolonged trial, because there seemed to be so much evident deterioration, although they had been showing continuous but rather slow progress. Including the two cases previously mentioned, which had only one and two inhalations respectively, the total number of the series is now 15. These 11 patients have been receiving treatment for varying periods, some only recently begun. For the purpose of grading the degree of improvement the terms slight, moderate, much improved and recovered, have been used. Although the result desired was the disappearance of stupor or mutism, such improvement was considered as only slight, in reference to the whole mental picture. Before progress was regarded to have been greater than this, it was desired that some definite improvement in the mental content of the psychosis be seen. In summary, it can be said that the improvement in six cases has been slight; in seven moderate; in one much and one has completely recovered. In all cases the mutism disappeared at the time of treatment.

This last patient has been on parole three months and is making a very excellent adjustment. She became ill within a few days after the birth of her first child, becoming mute almost immediately and had been so for three months, when treatments were begun. Dur-

ing her lucid period it became evident that she had a very strong father attachment. Following the inhalation she believed that she was in heaven with her father, heard him calling her, stated that she was single and never had a child. During recovery she became quite paranoid, misidentified people in her surroundings and continually referred to one female patient as "that man." She accused everyone of stealing her things and was particularly perturbed concerning the phantasied loss of her wedding ring. In her psychosis she re-lived that part of her life extending from the age of 14 up to the birth of her baby, in a fairly regular and chronological order. First, she was single and back on the farm with her father; then she lived through the death of her father, following which she had a depression which lasted for several months. She finally agreed to her courtship with her husband and her marriage; then believed that she had had a baby and that the baby had died. Finally she was willing to accept other people's statements that the baby was alive and being cared for by her sister. Six months after the onset of her psychosis and three months after treatment had begun, during which time she received seven inhalations, the patient was entirely recovered. She had complete insight, normal affect and no personality changes so far as could be determined. This patient was most profuse in her thanks for what had been done for her and it became obvious that she had developed a very marked transference to the author. She dreamed prolifically and in all her dreams he was the central figure, an obvious father substitute. At no time did she dream of her husband or of her baby.

A personality study of this patient given by herself revealed the following: that she had a very high intellectual endowment; had exhibited a strong father attachment, of which she was aware, and an excessive reaction and moderate depression following his death. She was always of a shut-in, undemonstrative type, being quite shy but very strongly attached to her few friends. She stated that she loved her husband very much, had looked forward to having her child, had been over-religious and quite prudish. In her own words she said, "I married my husband because he was never fresh with me. In spite of this I was sorry a thousand times that I ever got married."

Through the knowledge obtained during the lucid intervals and

in the progress of recovery, the causative factors in the psychosis could be better understood and a plan of psychotherapy more ably and beneficially be carried out. Such was done for the patient who has been paroled. The social service department, through their visits to the homes and through their clinics, has been a valuable adjunct in keeping in contact with the continuous progress of this patient.

It is obvious that little can actually be concluded from so small a series of cases and the author realizes that many of the inferences have been drawn from rather meagre data. It is significant, however, that all patients seemed to have shown some improvement following treatment and regressed when it was omitted. From a purely research point of view, much can be learned by this method concerning the mental mechanisms of patients in stupors. There seems to be many possible variations yet to be tried.

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## THE CLINICAL APPLICATION OF PSYCHOMETRIC TESTS

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There is a wide variety of psychometric tests. There is an almost equally wide variety of psychometric examiners. Many of these examiners are untrained, inexperienced and confused. The latter may be said to bear the same relation to psychology that the laboratory technician does to medicine. For collecting huge masses of data, for certain routine tasks they are very useful, but in dynamic clinical work they are just about as effective as the technician would be in the capacity of physician.

No physician would make his diagnosis on laboratory reports alone. No psychiatrist would base his conclusions solely on his patient's replies to questions. Likewise, no psychologist would be the slave of psychometric methods to the exclusion of general clinical material. These are laboratory aids to diagnosis, scientifically devised and objectively scored, but of real value only when interpreted in the light of the patient's heredity, developmental history, school achievement and medical history.

What, then, does the psychometric test represent to the clinical psychologist? To him it is a test of the symptoms of intelligence. It is a random sampling, obtained under controlled conditions, of an individual's behavior, responses to questions, and reactions to various situations. The test score means to the psychologist that in a given series of situations the individual reacted at a specified level. The question then arises: To what extent can this level of response be taken as indicative of native capacity? Experience and observation, as well as statistical studies have answered this. In most instances the score of any adequately standardized test can be taken as an index of that field of intelligence which it seeks to reach. But it is a measure of the general intelligence only insofar as the individual's abilities are intercorrelated. For instance, the so-called performance tests give a fairly dependable evaluation of a subject's capacity for dealing with concrete situations, but they rate his general intelligence only to the extent that the abilities measured happen to correlate with, for example, his verbal-abstract intelligence. Such correlations are positive, but in certain groups

such as mental defectives are apparently not very high. Hence the development of expressions like "the manually-minded defective," "the verbalist defective," and "the scholastic defective." The failure of the various scales to develop into the much-hoped-for tests of general intelligence does not imply any defect in the method of psychometrics. It demonstrates rather that an individual is not of necessity uniformly developed in the different aspects of his intelligence. The increased confidence in mental testing in the last few years and the final conversion of most of its opponents is due undoubtedly to some intrinsic merit of the tests.

Frequently we are asked what is the theory back of psychometric methods. The reply to this query involves much detail, so we shall discuss only the most practical aspect. Mental tests are really not new. From the beginning of time man has attempted to "size up" his fellows and each one has had his own criterion for doing so. We all form estimates of our associates' intelligence, based on the symptoms they show. If one individual has a good memory and another a poor one the fortunate possessor of the good memory is usually rated as the "brighter" by his friends. If, in addition to that, he comprehends readily what is said to him, and uses good judgment and reasoning in meeting the situations which confront him, our respect for his intelligence increases. Yet in observing him what have we done except vaguely rate him on an unstandardized intelligence test? Some years ago I was present during the examination of a suspected mental defective by a man who had (to use his own words) "no use for mental tests." He asked his patient a few questions in arithmetic, had her read a sentence or two, and attempted to get some idea of her comprehension. All the questions were admirably adapted to the eight-year level of ability. Yet without any knowledge of a normal child's development this physician who "did not believe in mental tests" created his own criterion for normal intelligence. Surely it is unnecessary to point out the advantages over this procedure of any test which has been administered to a sufficient number of unselected individuals to establish the type of response most representative of various levels. The psychologist believes, then, that if intelligence is to be gauged by its symptoms, they must be true symptoms, scientifically established.



Since our intelligence tests have been scientifically devised and standardized it follows logically that the technique of administration must be the same as that used in standardization. Otherwise, of course, the norms will not apply. As Terman states in his book, *The Measurement of Intelligence*, "It cannot be too strongly emphasized that unless we follow a standardized procedure the tests lose their significance. The danger is chiefly that of unintentionally and unconsciously introducing variations which will affect the meaning of the test. One who has not had a thorough training in the methods of mental testing cannot appreciate how numerous are the opportunities for the unconscious transformation of a test. . . . Sometimes the omission or the addition of a single phrase in giving the test will alter materially the significance of the response. Only the trained psychologist can vary the formula without risk of invalidating the result, and even he must be on his guard." And surely in the great majority of cases there is no reason for not following the prescribed directions. But this adherence to instructions, it should be emphasized, should not be permitted to result in a formal or stilted atmosphere during the examination. The testing technique, however, includes not only the instructions to the patient, but many other important points. A psychometric examination should be conducted only when all possible distracting influences are removed from the environment. Noise, extremes of temperature, visitors and striking pictures or furniture are all examples of these objective distractions. Subjective distractions, on the other hand, are not for obvious reasons, so readily detected nor so effectually removed. The general physical condition of the patient may in some instances affect attention, and certainly any such marked discomfort as pain may be expected to influence test results. The examiner must be ever on the alert for any evidence of subjective distractions, and if they prove to have a physical basis, should probably discontinue the test.

More frequent by far than these influences with a physical basis are those in the purely emotional field. In the case of psychotic patients an accurate rating is, I believe, seldom possible. I have seen many cases diagnosed as definitely defective who were undoubtedly normal individuals from an intellectual standpoint, but who were so disturbed as to render test results wholly unreliable.

Since attention and cooperation are of primary importance in psychometrics it is obvious that such methods cannot be strictly applied to the insane. We see the same condition in a lesser degree operating in the case of those unstable individuals sometimes classed as psychopathic. Usually, fairly dependable results are obtained on these patients if the examiner shows sufficient tact and resourcefulness. Sometimes several sittings are required before cooperation can be secured or conclusions drawn. Unfortunately, the emotional factor is often found even in more stable persons. Most children who have had school difficulties, and particularly mental defectives, have learned to associate the test situation with their difficulties and are sensitive regarding it. Frequently they are worried or fearful. In the case of mental defectives it requires both experience and tact to administer the test so that it is at once comprehensible to the patient yet not insulting to his dignity. An adult idiot, upon being asked whether he is a little boy or a little girl will sometimes reply indignantly that he is neither. Inquiry by the examiner brings out the fact that he is a big boy, a tall boy, or possibly a man, but, of course, not a little boy.

There are several classes of patients who, because of their handicaps, require a special technique. These are perhaps deserving of mention in detail. Since the average psychological laboratory has rather limited equipment and facilities the examiner must adapt to his needs the material at his disposal. The totally blind and those suffering from pronounced vision difficulties should be rated by the question-and-answer type of test—omitting all visual material—and should be scored rather liberally. The deaf can be given non-language and pantomime tests and any performance material which does not require lengthy explanation. The same applies, of course, to anyone with a language handicap. Marked speech defects can be best met by utilizing material which does not involve much oral response. If the patient can read or write, however, the task becomes much simpler as selection can then be made from a wide variety of tests. When the disabilities are in the motor field they are apt to throw out any test with a time element. Those neurological cases which combine several physical disabilities are calculated to strain the examiner's ingenuity to the limit. If, for example, the patient's infirmities are both visual and motor, the

examination may be conducted as with the blind. Where a combination of auditory and motor handicaps exists, all material requiring a time limit must be discarded and the instructions given in writing, or in pantomime if necessary. Speech and motor disabilities frequently occur together in neurological cases. Here, of course, the procedure should disregard time and involve as little as possible of lengthy verbal replies. Most difficult of all to rate are blind deaf mutes. Here the writer usually estimates a mental age based on the subject's ability to repeat movements he is taught, count objects within reach, perform simple tasks, etc.

*It is in the interpretation and utilization of test results that they are most abused.* An entire volume might well be devoted to discussing this phase of the subject but a few fundamental points may be outlined here. In the case of a normal, reasonably well-adjusted individual the results may be taken at their face value. But it is not with normal persons that we are usually called upon to work. Most psychological examinations are given as part of the study of a problem case. It is assumed that the examiner has made his selection of tests in accordance with the nature of the problem. He should then, if he is well trained and experienced, be able to form some opinion as to the reliability of his results. If physical or emotional handicaps have entered into the test situation a note should be made to that effect, accompanied by comment as to whether test results seemed particularly affected. In extreme and rare cases it may be necessary to estimate a mental age which will more nearly represent the patient's abilities than any conventional psychometric score. This may be done by administering an abbreviated or modified scale, adapted to the patient's handicaps. Color blindness, strephosymbolia, and certain vision defects such as myopia and astigmatism will affect some tests, yet not others, and will at times account for apparently inconsistent scores. It is almost needless to remark that low scores should be discounted in such instances. A reading disability, whatever its cause, may throw off the psychometric result and rate the patient far lower than his actual capacity. Occasionally one sees an individual who has a special disability in dealing with form and design. When this disability is clearly present, it invalidates the score on the commonly used formboards. Even when there is no pronounced

language handicap there is some doubt of the reliability of certain tests in rating children from non-English-speaking homes. In the interpretation of test scores these and similar points must be borne in mind.

In the utilization of psychometric results the first step is an analysis of the findings. The so-called "psychological profile" is a graphic method of accomplishing this. Whatever the method, it is helpful in studying a patient to compare his scores on different tests. This indicates his level of accomplishment in various spheres, and when taken in conjunction with the history, frequently sheds light on his problems. Since the school history is at times unreliable or unobtainable the psychologist frequently administers standardized tests of school achievement as a partial check on his psychometric rating. In the case of psychotic patients, even where the test score is worthless, a combination of intelligence and achievement tests will often provide clues as to the original intelligence level. This procedure proves especially useful to diagnosis in institutions for the feeble-minded, where there is always a sprinkling of deteriorated psychotic cases, particularly among the imbeciles and idiots. With mental defectives psychometric results can help determine whether the patient can be adjusted in the community or must be permanently institutionalized. In some instances the tests may bring out that a superior individual is being restrained by an environment too limited for his abilities—with resulting conflict. In other cases a complete psychometric examination will demonstrate the presence of special disabilities which, in spite of a good intelligence level, have resulted in a marked retardation or behavior disorder. And, perhaps most important of all, careful use of psychometric measures will oftentimes rule out entirely the intelligence make-up as a causative factor in the problem.

## LEGISLATIVE ASPECTS OF MENTAL HYGIENE

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### ABSTRACT

*In an address to the New York League of Women Voters in Schenectady, N. Y., on March 2, 1932, Dr. Patry set forth the following important mental hygiene projects which should be promoted by legislation. While some of these projects refer principally to conditions in New York State, they are also worthy of consideration by executives and legislators of other states.*

1. *Extension of child guidance work.* The Division of Prevention of the New York State Department of Mental Hygiene is rendering yeoman's service in this field. However, legislation and a larger budget are desirable to increase the personnel of this service in order to meet adequately the increasing demands and opportunities. School systems, county welfare organizations, juvenile courts and other agencies have come to value greatly the help given by these clinics. They have made themselves indispensable. Since they are chiefly concerned with the recognition and treatment of early types of mental maladjustment, their clinical service and educational value are inestimable. As soon as possible the more populous communities should bend every effort to establish their own local child guidance clinics, and in less populous districts, clinic service might be contracted for with adjacent districts for conjoint local service. Decentralization of child guidance work is a wholesome trend since it serves to stimulate local interest and pride and tends to insure optimum service. The larger city school systems should have their own child guidance clinics under the direction of specially trained psychiatrists assisted by psychologists, psychiatric social workers (visiting teachers) and adequate clerical help.

2. *Provision for observation wards for the mentally-ill patients in general hospitals.* Such facilities would not only enhance the earlier recognition and treatment of incipient cases, but would eliminate the all too frequent use of almshouses and other inadequate places of detention instead of intelligent treatment. During



this critical period of a mental illness pending transfer to a state or private mental hospital it is highly important that the best of care and treatment be given. The local facilities thus afforded would also materially help to reduce the regrettable overcrowding in nearly all our State hospitals. Moreover, such local resources would perhaps lead to earlier home care. The linking up of treatment for the mentally ill in our general hospitals on the same footing as the physically ill would contribute much to the disappearance of the traditional taboo and prejudice concerning our mentally sick. Obviously they should be regarded with the same humane interest, care and treatment as patients with any other form of illness. Should more protracted treatment be provided for mental patients in general hospitals, the relatives will feel that every consideration and careful examination and treatment has been given the patient prior to transference to a State hospital. Thus their friendly cooperation and good will and understanding toward the State hospital, which splendidly carry the brunt of the treatment of these patients, will become established.

3. *Establishment of more psychopathic hospitals.* These might be considered a logical outgrowth and development of the psychopathic wards in connection with general hospitals. However, in view of the economic, research, teaching and educative factors, such institutions are desirable only as integral parts of medical centers in relatively large cities where medical schools can profit thereby. Such institutions working in close contact with general hospitals are of great value in the care and treatment of early manifestations of mental maladjustments as well as those who have various forms of personality difficulties and who require or would profit by a period of study and re-education in such carefully controlled surroundings. One of the advantages of this type of hospital is the small patient-physician ratio, an essential factor for intensive study and research. They should be staffed by psychiatrists who naturally have teaching ability but also possess that rarer capacity and bent for critical research work. If substantial progress is to be made in understanding, treating and preventing mental disorders, we must always give bountiful support and encouragement to research. If anyone doubts the economic value of such measures, he has merely to turn to any progressive manufac-

turing plant or business concern to realize the tremendous saving and competitive value in maintaining the highest type of scientific and personnel research.

4. *The appointment of psychiatrists to public health and social welfare departments.* Since mental hygiene is an important phase of all types of education, health service and social welfare, well qualified psychiatrists should be appointed to these departments to share common problems and promote education and service from the mental health angle. It is becoming increasingly recognized that the successful understanding and treatment of physical disorders such as tuberculosis, orthopedic defects, social diseases, maternity, pre-school, child and infant welfare clinic patients, as well as other institutional, individual and group health problems, largely depend upon the wise handling of the integrated mental health aspects. Similarly departments of social welfare could greatly profit by having consulting psychiatrists on their staffs. Agencies and institutions under their direction are bristling with psychiatric problems which at present are not sufficiently recognized; if recognized, little is done to meet them adequately because of a lack of trained psychiatric personnel.

5. *The establishment of dispensaries or out-patient departments for psychiatric service in connection with general hospitals and psychopathic hospitals.* Such service would be of valuable complementary and supplementary service to extension and traveling clinics operated by the various State hospitals and the Division of Prevention of the Department of Mental Hygiene, as well as to other child guidance clinics in operation. Patients who require special study and observation or temporary treatment could be relatively easily admitted to the in-patient wards which form a part of the hospital proper. This in turn would help to diminish the overcrowding so prevalent in our State hospitals.

6. *Psychiatric examination of public officials and other individuals in whom reposes responsibility for the safety of human life.* It is not an uncommon occurrence in psychiatric clinics to discover mentally handicapped individuals engaged in important occupations that concern the safety of others. They may be bus drivers, navigation officers, train engineers, street car motormen, and so forth. Competent psychiatric examination of candidates for such

positions and regular periodic examinations thereafter would perhaps materially effect the accident rate or loss of life. Support for this contention is given by Dr. V. V. Anderson, director of employment, placement and personnel research of R. H. Macy and Co., Inc., New York. He found that 74 per cent of all the company's auto accidents occurred at the hands of 55 per cent of their force of car operators. By diverting the risks which were poor because of mental instability into other lines of employment in which human life was not at stake, the accident rate was materially reduced. One nationally known psychiatrist has suggested psychiatric examinations for judges and army and navy officers and others in high positions of public service.

7. *Measures to diminish, and eliminate where possible, unnecessary noise.* This topic has been made one of the objectives of the Albany County Mental Hygiene Society for the current year. Although anti-noise organizations have flourished in Europe for some 50 years, their appearance in this country has been very recent. Studies and surveys have shown that the wear and tear caused by repetitious noise not only impairs one's sense of composure and comfort but also one's working efficiency. One investigation reported that 19 per cent more energy was required to perform certain duties in noisy locations than in quiet surroundings. Contrary to general opinion, investigations have shown that it is impossible to sleep soundly where noise is present, even though it be not of sufficient intensity to awaken a person. Under such conditions, we do not find individuals refreshed after their apparent slumber. Indeed it may be a strain and de-energizer to attempt to sleep under such conditions. It is not so much the occasional outburst of noise that does harm, as the constant drip that eventually wears on one, often precipitating conditions referred to by the layman as "nerves" or "nervousness." As far as possible, every effort should be bent to eradicate or at least dampen noise whether it be outside or within our place of employment or home. New York City has an active anti-noise organization and it is hoped that other urban centers will actively interest themselves in this important health problem. Beyond the shadow of a doubt, all evidence points to the fact that noise is a real menace to health.

8. *The appointment of psychiatrists on the staff of all correc-*

*tional institutions, and those concerned with delinquency and mentally abnormal individuals.* The New York State Department of Correction is making excellent efforts towards this end. Prisons, jails, reformatories and penitentiaries are bubbling over with all sorts of psychiatric problems which merit expert study and treatment. Psychiatric personnel is also needed for after-care and follow-up work. A period of detention is of little value unless we strive to guide, encourage and maintain the individual on an acceptable socialized level of living after he leaves the institution.

9. *The appointment of consulting psychiatrists to all juvenile courts and criminal courts.* A large percentage of these individuals cannot be properly understood and rationally and justly treated unless a thorough psychiatric examination has been made. We are seeing the folly of merely judging criminal or delinquent behavior without making an effort to interpret the causes thereof. There are no two individuals just alike and certainly no two criminal acts can be evaluated as of equal significance. The *person* and not merely the act itself should demand our chief consideration and study. Every effort should be made to ascertain his assets and liabilities, modifiable as well as unmodifiable, and shape the sentence or decision according to all the factors that enter into the case. This must include facts of physical and mental health, social and economic status, constitutional and developmental facts, emotional maturity, personality features, habit patterns as well as the environmental data. Since we are not omniscient, our treatment, in the main, should be guided by the course of reaction and adaptability of the individual undergoing detention. The chief question should be, "Can this person be constructively socialized?" We must admit that some human material is practically unmodifiable. Of course we must put such persons to reasonable tests and give them every opportunity for social readaption and whenever we are in doubt, give them the benefit of it. But I see no better way to mete out the best type of justice and treatment of the individual, and at the same time subserve our duty to society, than by the judicious utilization of the indeterminate sentence. Psychiatric counsel should be freely drawn upon to share in the problems of restitution of these unfortunate members of society. Moreover every help, such as properly qualified teachers and vocational and

occupational outlets and training, should be marshalled into the gamut of the reconstruction program.

10. *Provision for the appointment by the State of an impartial board of qualified psychiatric experts to examine and report on the criminal responsibility of all persons for whom an insanity plea is made or in whom there is evidence of mental disease or defect.* The practice in Massachusetts whereby a person indicted by a grand jury for a capital offense, or indictment for any other offense more than once, is considered a subject for mental examination by the Department of Mental Diseases which determines the existence of any mental disease or defect which would affect his criminal responsibility, should merit our critical study and perhaps emulation.



# STATISTICAL REVIEW OF OCCUPATIONAL THERAPY IN THE NEW YORK CIVIL STATE HOSPITALS FOR THE FISCAL YEAR ENDED JUNE 30, 1931

BY HORATIO M. POLLOCK AND GERTRUDE M. MACK

Occupational therapy has been conducted as an organized activity of the New York State Department of Mental Hygiene and its predecessor, the State Hospital Commission, since 1923. The general supervision of the work is vested in the bureau of occupational therapy of which Mrs. Eleanor C. Slagle is director. She is aided by an assistant director and a supervisor of physical instruction. The treatment work in each State hospital is in charge of a chief occupational therapist who is assisted by occupational therapists, physical instructors and attendants specially detailed for this work.

At the end of the fiscal year of 1931, the occupational therapy personnel of the State hospitals comprised 16 chief occupational therapists, 2 assistant chief occupational therapists, 38 occupational therapists, 68 special attendants, 7 physical instructors and 33 special attendants detailed for physical instruction work, a total of 164 persons. The increase in employees in the occupational therapy department during the year was 13.

The volume of work carried on by the occupational therapy department in the several State hospitals is indicated by Table 1. The table includes only patients who receive regular treatment in occupational therapy or physical instruction classes. Referring to this table it is seen that 13,574 patients were receiving treatment at the beginning of the year; 13,787 were admitted to treatment during the year; 13,175 left treatment and 14,186 remained under treatment at the end of the year. Of these, 6,468 were receiving physical training only. The increase of patients under treatment during the year was 612; the increase among males was 197 and among females, 415. The number receiving physical training only, increased by 582. Notable increases occurred during the year in patients under occupational treatment in the following State hospitals: Brooklyn, Buffalo, Central Islip, Marcy and Rochester. Owing to the transfer of patients from the Manhattan State Hospital caused by the abandonment of the temporary buildings of the Naval Base Hospital, the volume of occupational therapy work in that institution declined during the year.

TABLE 1. MOVEMENT OF OCCUPATIONAL THERAPY PATIENTS IN THE STATE HOSPITALS DURING THE YEAR ENDED JUNE 30, 1931

State hospitals	Under treatment, July 1, 1930			Admitted to treatment during year			Total under treatment during year			Left treatment during year			Under treatment June 30, 1931			Receiving physical training only, June 30, 1931		
	M	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Binghamton .....	607	589	1,196	333	339	672	940	928	1,868	309	288	597	631	640	1,271	372	338	710
Brooklyn .....	174	209	383	613	900	1,513	787	1,109	1,896	535	802	1,337	252	307	559	102	105	207
Buffalo .....	312	713	1,025	501	542	1,043	813	1,255	2,068	405	489	894	408	766	1,174	284	138	422
Central Islip .....	541	871	1,412	968	990	1,958	1,509	1,861	3,370	957	871	1,828	552	990	1,542	274	640	914
Creedmoor .....	433	581	1,014	310	431	741	743	1,012	1,755	318	397	715	425	615	1,040	303	385	688
Gowanda .....	225	261	486	281	293	574	506	554	1,060	291	313	604	215	241	456	100	87	187
Harlem Valley .....	161	235	396	64	122	186	225	357	582	48	133	181	177	224	401	..	..	..
Hudson River .....	673	1,093	1,766	902	682	1,584	1,575	1,775	3,350	894	684	1,578	681	1,091	1,772	289	381	670
Kings Park .....	998	750	1,748	535	689	1,224	1,533	1,439	2,972	669	546	1,215	864	893	1,757	280	217	497
Manhattan .....	455	746	1,201	444	784	1,228	899	1,530	2,429	620	840	1,460	279	690	969	..	164	164
Marcy .....	46	244	290	32	390	422	78	634	712	11	214	225	67	420	487	64	273	337
Psy. Inst. and Hosp. .....	21	34	55	152	170	322	173	204	377	120	139	259	53	65	118	..	..	..
Middletown .....	228	510	738	103	220	323	331	730	1,061	87	259	346	244	471	715	153	212	365
Rochester .....	131	381	512	413	282	695	544	663	1,207	128	343	471	416	320	736	398	174	572
St. Lawrence .....	18	144	162	33	91	124	51	235	286	39	97	135	12	138	150	..	..	..
Syracuse .....	..	..	..	80	76	156	80	76	156	71	66	137	9	10	19	13	..	13
Utica .....	303	402	705	280	224	504	583	626	1,209	320	341	661	263	285	548	172	189	361
Willard .....	208	277	485	169	349	518	377	626	1,003	194	337	531	183	289	472	183	178	361
Total .....	5,534	8,040	13,574	6,213	7,574	13,787	11,747	15,614	27,361	6,016	7,159	13,175	5,731	8,455	14,186	2,987	3,481	6,468

The trend in the extent of occupational therapy in the entire State hospital system is shown both absolutely and relatively for the years 1923 to 1931 in Table 2. The patients receiving occupational treatment at end of year increased during the period of 8 years covered by the table from 5,340, or 16.2 per cent of all resident patients, to 14,186, or 28.7 per cent.

Organization of the occupational therapy departments in the several State hospitals was not fully completed until 1926 although the work in most of the hospitals was flourishing prior to that time. Since 1926, there has been a further gradual expansion of the work but owing to the large increase in patients in the several hospitals the percentage of patients receiving treatment has not risen.

The extent of occupational therapy among females is constantly greater than that among males. Likewise, the percentage of increase in number of patients treated has been greater among females than among males. The differences are due in part to greater employment of men patients in the shop industries and the agricultural operations of the several institutions. It is also probable that indoor work for women is more easily organized than indoor work for men. The latter as a rule requires more equipment and more space per patient.

TABLE 2. PATIENTS IN THE OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS AT CLOSE OF FISCAL YEARS, 1923-1931, INCLUSIVE

Date	Number in occupational therapy departments			Number in occupational therapy departments per 100 patients in the State hospitals		
	M.	F.	T.	M.	F.	T.
June 30, 1923 .....	*	*	5,340	*	*	16.2
June 30, 1924 .....	*	*	7,339	*	*	18.8
June 30, 1925 .....	*	*	9,849	*	*	24.4
June 30 1926 .....	5,146	6,923	12,069	26.4	31.7	29.2
June 30, 1927 .....	5,134	7,839	12,973	25.3	34.8	30.3
June 30, 1928 .....	5,673	7,372	13,045	26.9	31.5	29.3
June 30, 1929 .....	5,533	7,499	13,032	25.8	31.4	28.8
June 30, 1930 .....	5,534	8,040	13,574	24.5	32.5	28.7
June 30, 1931 .....	5,731	8,455	14,186	24.1	32.9	28.7

\*Data not available.

It is also noteworthy that the females exceed the males in physical training classes although the distribution of the two sexes in such classes in the several hospitals varies widely.

The extent of occupational treatment other than physical training at the end of each year from 1927 to 1931 is shown in Table 3. The figures indicate a gradual expansion but the percentage of patients under treatment is not increasing.

TABLE 3. PATIENTS IN THE OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS (EXCLUSIVE OF THOSE IN RECEIPT OF PHYSICAL TRAINING ONLY)

Date	Number			Number per 100 patients in the State hospitals		
	M.	F.	T.	M.	F.	T.
June 30, 1927 .....	2,098	4,714	6,812	10.3	21.0	15.9
June 30, 1928 .....	2,421	4,658	7,079	11.5	19.9	15.9
June 30, 1929 .....	2,481	4,373	6,854	11.6	18.3	15.1
June 30, 1930 .....	2,761	4,927	7,688	12.2	19.9	16.2
June 30, 1931 .....	2,744	4,974	7,718	11.6	19.4	15.6

#### CASES TREATED DURING THE YEAR

In accordance with the statistical system in use in the department, individual schedule cards are submitted to the bureau of statistics for all patients treated in occupational classes except those receiving physical training only. The numbers of patients thus reported by the several State hospitals are shown in Table 4. The rate of patients given occupational therapy based on the total patients under care is also shown by sex for each hospital. The rates vary widely, the general average rate being 21.8 per cent. Hospitals with rates considerably above the average are Brooklyn, Kings Park, Marey, Psychiatric Institute and Hospital, and Syracuse Psychopathic Hospital. Exceptionally low rates are shown for Middletown and Willard. The rates for females are markedly higher than those for males in nearly all of the hospitals, the general average percentage being 26.6 and 16.8, respectively. In 1930, the corresponding rates were 26.2 and 16.0. A decidedly upward trend in annual number and rate of patients given occupational treatment other than physical training in the State hospital system

since 1926 is shown by Table 5. The total annual number treated has increased from 8,664 in 1926, to 13,951 in 1931, and the rate from 16.4 to 21.8.

TABLE 4. PATIENTS\* TREATED IN OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEAR ENDED JUNE 30, 1931

State hospitals	Number			Rate per 100 patients under care in the State hospitals during year		
	M.	F.	T.	M.	F.	T.
Binghamton .....	430	480	910	21.8	32.0	26.2
Brooklyn .....	657	840	1,497	41.1	46.3	43.8
Buffalo .....	214	520	734	13.9	31.4	22.9
Central Islip .....	652	858	1,510	12.7	21.2	16.4
Creedmoor .....	209	828	537	22.9	25.1	24.2
Gowanda .....	217	242	459	22.2	34.9	27.4
Harlem Valley .....	177	224	401	21.4	25.5	23.5
Hudson River .....	309	504	813	12.4	17.6	15.2
Kings Park .....	1,139	1,539	2,678	30.6	43.0	36.7
Manhattan .....	564	1,270	1,834	12.2	22.9	18.1
Marcy .....	88	471	559	18.8	83.8	54.3
Middletown .....	39	103	142	2.4	5.3	4.0
Psy. Inst. and Hospital .....	144	163	307	81.4	77.6	79.3
Rochester .....	26	236	262	2.3	16.2	10.1
St. Lawrence .....	28	251	279	2.1	16.8	10.0
Syracuse Psychopathic Hospital.....	63	67	130	38.2	58.3	46.4
Utica .....	337	329	666	26.9	26.1	26.5
Willard .....	..	233	233	..	14.3	7.2
Total .....	5,293	8,658	13,951	16.8	26.6	21.8

\*Exclusive of those receiving physical training only.

TABLE 5. PATIENTS\* TREATED IN THE OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK STATE HOSPITALS DURING THE FISCAL YEARS, 1926-1931

Year	Number			Rate per 100 patients under care in the State hospitals during year		
	M.	F.	T.	M.	F.	T.
1926 .....	2,817	5,867	8,684	11.1	21.2	16.4
1927 .....	3,239	6,723	9,962	12.3	23.9	18.3
1928 .....	3,814	7,210	11,024	13.7	24.6	19.3
1929 .....	4,504	7,587	12,091	15.6	25.0	20.4
1930 .....	4,834	8,263	13,097	16.0	26.2	21.2
1931 .....	5,293	8,658	13,951	16.8	26.6	21.8

\*Exclusive of those receiving physical training only.



The extent of occupational treatment of patients in the several clinical groups is shown by Table 6. Although numerically dementia præcox and manic-depressive patients constitute the largest groups receiving occupational therapy, some of the other psychoses are represented by higher rates. The adaptation of occupational therapy to the organic groups in the measure shown by this table is a noteworthy achievement.

TABLE 6. DIAGNOSES OF PATIENTS TREATED IN OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS DURING THE FISCAL YEAR ENDED JUNE 30, 1931

Psychoses	Number			Rate per 100 patients in the State hospitals		
	M.	F.	T.	M.	F.	T.
Traumatic .....	51	13	64	18.0	29.5	19.6
Senile .....	78	190	268	9.0	13.4	11.8
With cerebral arteriosclerosis .....	200	252	452	10.7	17.2	13.5
General paralysis .....	449	221	670	18.7	29.0	21.2
With cerebral syphilis .....	27	27	54	11.9	18.6	14.5
With Huntington's chorea .....	3	7	10	*	*	*
With brain tumor .....	1	2	3	*	*	*
With other brain or nervous diseases .....	95	104	199	27.5	42.3	33.7
Alcoholic .....	270	130	400	13.4	23.8	15.6
Due to drugs and other exogen. toxins .....	5	14	19	10.0	27.5	18.8
With pellagra .....	..	1	1	*	*	*
With other somatic diseases .....	11	81	92	7.1	27.4	20.4
Manic-depressive .....	512	1,716	2,228	20.2	35.5	30.3
Involution melancholia .....	69	327	396	16.0	33.1	27.9
Dementia præcox .....	2,942	4,340	7,282	18.7	25.8	22.4
Paranoia or paranoic conditions .....	40	161	201	8.3	18.5	14.9
Epileptic psychoses .....	126	182	308	18.4	27.7	23.0
Psychoneuroses and neuroses .....	70	196	266	30.8	51.2	43.6
With psychopathic personality .....	127	201	328	24.8	35.6	30.5
With mental deficiency .....	128	337	465	12.3	29.1	21.1
Undiagnosed psychoses .....	68	135	203	13.0	28.1	20.2
Without psychosis .....	21	21	42	18.1	30.4	22.7
Total .....	5,293	8,658	13,951	16.9	26.7	21.9

\*Rate was not computed when base was less than 100.

## CONDITION OF PATIENTS AFTER TREATMENT

The improvement and recovery of mental patients are influenced by many factors in addition to the formal treatment given them in hospitals. It is believed, however, that occupational treatment given for a specific purpose is a potent factor in restoring patients to health. An attempt is made by the hospital physicians at the end of each year to evaluate the progress of each patient treated in occupational therapy classes during the year, and the condition of the patient at the end of the year is reported as recovered, improved or unimproved on the statistical schedules. It is clearly understood that occupational therapy alone is not to be credited with all the favorable results achieved.

Table 7 sets forth the numerical results relating to condition as reported by the several hospitals for the year 1931 and Table 8 shows the percentage distribution of such results. Of the 13,951 patients under consideration, 363, or 2.6 per cent, were recovered; 6,330, or 45.4 per cent, were improved; 6,922, or 49.6 per cent, were unimproved; 231, or 1.7 per cent, died in the hospital; and 105, or 0.8 per cent, were unreported. The low recovery rate is due in part to the large number of chronic patients treated and in part to the fact that patients as a rule are not kept in occupational therapy classes until fully recovered. Many of the improved cases are given work in hospital industries and others are paroled.

Wide variations in results in the several hospitals are shown by the table. These would be expected as the types of patients to be treated and the selection of cases for treatment are not uniform throughout the State. The hospitals which care for large numbers of chronic patients received from other hospitals by transfer are naturally placed at a disadvantage when compared with institutions with a larger proportion of acute cases.

In Table 9 are shown comparative rates of recovery and improvement of patients given occupational treatment during the years 1926 to 1931. Results for the several years are similar and do not reveal any marked trends upward or downward. Rates for the two sexes average nearly the same during the series of years although considerable variation from year to year is noted.

TABLE 7. REPORTED CONDITION\* OF PATIENTS TREATED IN OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS DURING THE YEAR ENDED JUNE 30, 1931

State hospitals	Total			Recovered			Improved			Unimproved			Died			Unreported		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Binghamton .....	430	480	910	19	4	23	198	184	382	203	282	485	8	10	18	2	..	2
Brooklyn ...	657	840	1,497	1	3	4	411	386	797	226	425	651	18	25	43	1	1	2
Buffalo .....	214	520	734	..	6	6	106	243	349	103	258	361	2	12	14	3	1	4
Central Islip .....	652	858	1,510	11	13	24	486	566	1,052	155	277	432	..	1	1	..	1	1
Creedmoor .....	209	328	537	..	1	1	87	119	206	119	197	316	3	11	14	..	..	..
Gowanda .....	217	242	459	38	14	52	74	58	132	103	166	269	2	1	3	..	3	3
Harlem Valley .....	177	224	401	..	..	..	96	124	220	81	100	181	..	..	..	..	..	..
Hudson River .....	309	504	813	..	..	..	52	124	176	250	373	623	7	7	14	..	..	..
Kings Park .....	1,139	1,539	2,678	10	22	32	511	551	1,062	576	924	1,500	22	33	55	20	9	29
Manhattan .....	564	1,270	1,834	6	116	122	174	395	569	376	729	1,105	3	29	32	5	1	6
Marcy .....	88	471	559	2	4	6	28	90	118	57	369	426	..	8	8	1	..	1
Middletown .....	39	103	142	2	3	5	27	79	106	6	15	21	..	3	3	4	3	7
Psy. Inst. and Hosp. .....	144	163	307	9	15	24	79	65	144	37	74	111	1	1	2	18	8	26
Rochester .....	26	236	262	..	5	5	10	185	195	15	46	61	1	..	1	..	..	..
St. Lawrence .....	28	251	279	..	..	..	17	194	211	10	33	43	..	4	4	1	20	21
Syracuse .....	63	67	130	12	14	26	35	38	73	15	15	30	1	..	..	..	..	..
Utica .....	337	329	666	14	19	33	225	189	414	90	116	206	8	5	13	..	..	..
Willard .....	..	233	233	..	..	..	..	124	124	..	101	101	..	5	5	..	3	3
Total .....	5,293	8,658	13,951	124	239	363	2,616	3,714	6,330	2,422	4,500	6,922	76	155	231	55	50	105

\*At end of year or at time of discontinuance of treatment.

TABLE 8. PER CENT DISTRIBUTION OF REPORTED CONDITION OF PATIENTS TREATED IN OCCUPATIONAL THERAPY DEPARTMENTS OF NEW YORK CIVIL STATE HOSPITALS DURING THE YEAR ENDED JUNE 30, 1931

State hospitals	Total			Recovered			Improved			Unimproved			Died			Unreported		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Binghamton .....	430	480	910	4.4	0.8	2.5	46.0	38.3	42.0	47.2	58.8	53.3	1.9	2.1	2.0	0.5	..	0.2
Brooklyn .....	657	840	1,497	0.2	0.4	0.3	62.6	46.0	53.2	34.4	50.6	43.5	2.7	3.0	2.9	0.2	0.1	0.1
Buffalo .....	214	520	734	..	1.2	0.8	49.5	46.7	47.5	48.1	49.6	49.2	0.9	2.3	1.9	1.4	0.2	0.5
Central Islip .....	652	858	1,510	1.7	1.5	1.6	74.5	66.0	69.7	23.8	32.3	28.6	..	0.1	0.1	..	0.1	0.1
Creedmoor .....	209	328	537	..	0.3	0.2	41.6	36.3	38.4	56.9	60.1	58.8	1.4	3.4	2.6	..	..	..
Gowanda .....	217	242	459	17.5	5.8	11.3	34.1	24.0	28.8	47.5	68.6	58.6	0.9	0.4	0.7	..	1.2	0.7
Harlem .....	177	224	401	..	..	..	54.2	55.4	54.9	45.8	44.6	45.1	..	..	..	..	..	..
Hudson River .....	309	504	813	..	..	..	16.8	24.6	21.6	80.9	74.0	76.6	2.3	1.4	1.7	..	..	..
Kings Park .....	1,139	1,539	2,678	0.9	1.4	1.2	44.9	35.8	39.7	50.6	60.0	56.0	1.9	2.1	2.1	1.8	0.6	1.1
Manhattan .....	564	1,270	1,834	1.1	9.1	6.7	30.9	31.1	31.0	66.7	57.4	60.3	0.5	2.3	1.7	0.9	0.1	0.3
Marcy .....	88	471	559	*	0.8	1.1	*	19.1	21.1	*	78.3	76.2	..	1.7	1.4	*	..	0.2
Middletown .....	39	103	142	*	2.9	3.5	*	76.7	74.6	*	14.6	14.8	..	2.9	2.1	*	2.9	4.9
Psy. Inst. and Hosp. .....	144	163	307	6.3	9.2	7.8	54.9	39.9	46.9	25.7	45.4	36.2	0.7	0.6	0.7	12.5	4.9	8.5
Rochester .....	26	236	262	..	2.1	1.9	*	78.4	74.4	*	19.5	23.3	*	..	0.4	..	..	..
St. Lawrence .....	28	251	279	..	..	..	*	77.3	75.6	*	13.1	15.4	..	1.6	1.4	*	8.0	7.5
Syracuse .....	63	67	130	*	*	20.0	*	56.2	56.2	*	..	..	..	*	0.8	..	..	..
Utica .....	337	329	666	4.2	5.8	5.0	66.8	57.4	62.2	26.7	35.3	30.9	2.4	1.5	2.0	..	..	..
Willard .....	..	233	233	..	..	..	..	53.2	53.2	..	43.3	43.3	..	2.1	2.1	..	1.3	1.3
Total .....	5,293	8,658	13,951	2.3	2.8	2.6	49.4	42.9	45.4	45.8	52.0	49.6	1.4	1.8	1.7	1.0	0.6	0.8

\*Percentage was not computed when base was less than 100.

TABLE 9. REPORTED CONDITION OF PATIENTS AFTER TREATMENT IN OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS, PER 100 UNDER TREATMENT, DURING FISCAL YEAR ENDED JUNE 30, 1926, 1927, 1928, 1929, 1930 AND 1931

Year	Of every 100 under treatment														
	Recovered			Improved			Unimproved			Died			Unreported		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1926.....	2.2	1.9	2.0	45.3	48.7	47.5	49.7	45.6	46.9	1.4	1.6	1.6	1.4	2.2	2.0
1927.....	1.9	2.3	2.2	46.8	50.0	49.0	49.2	44.6	46.1	0.9	1.1	1.0	1.2	2.0	1.7
1928.....	2.6	2.4	2.4	47.5	45.6	46.3	47.8	49.7	49.0	1.0	1.6	1.4	1.1	0.7	0.9
1929.....	2.2	2.2	2.2	49.9	47.1	48.2	45.1	48.7	47.3	1.7	1.6	1.6	1.1	0.4	0.7
1930.....	2.3	2.3	2.3	47.1	43.1	44.6	48.0	52.3	50.7	1.8	1.5	1.6	0.8	0.7	0.7
1931.....	2.3	2.8	<b>2.6</b>	49.4	42.9	45.4	45.8	52.0	49.6	1.4	1.8	1.7	1.0	0.6	0.8

The reported condition of patients, after treatment, classified by psychoses, is shown in Tables 10 and 11. It is noteworthy that apparently favorable results are obtained in all psychotic groups. The percentages of improved cases in the organic groups average fully as high as those in the functional groups. A slight gain in recovery and improvement rates is noted over the results of the previous year. The psychotic groups showing results above the average include psychoses with cerebral arteriosclerosis, general paralysis, alcoholic psychoses, manic-depressive psychoses, epileptic psychoses, psychoneuroses, and psychoses with psychopathic personality.

#### CONCLUSIONS

1. The trend in occupational therapy in the New York State hospitals continues upward.
2. The number of patients given physical training only increased in 1931.
3. The proportion of patients given occupational therapy in the several State hospitals varies widely. Further extension of treatment facilities seems to be indicated in certain hospitals.
4. More female than male patients receive occupational therapy. Expansion of treatment among males in certain hospitals appears desirable.
5. Occupational therapy is being successfully adapted for the general treatment of organic cases as well as those with functional disorders.



TABLE 10. REPORTED CONDITION\* BY PSYCHOSES OF PATIENTS TREATED IN OCCUPATIONAL THERAPY DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS DURING THE YEAR ENDED JUNE 30, 1931

Psychoses	Total			Recovered			Improved			Unimproved			Died			Unreported		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Senile .....	78	190	268	1	..	1	37	48	85	37	122	159	2	17	19	1	3	4
With cerebral arteriosclerosis .....	200	252	452	2	4	6	114	103	217	73	126	199	10	19	29	1	..	1
General paralysis .....	449	221	670	3	3	6	230	108	338	194	105	299	16	5	21	6	..	6
With other brain or nervous diseases .....	95	104	199	3	1	4	45	48	93	45	52	97	1	3	4	1	..	1
Alcoholic .....	270	130	400	27	15	42	161	78	239	77	33	110	3	3	6	2	1	3
Manic-depressive .....	512	1,716	2,228	38	102	140	316	930	1,246	147	656	803	7	19	26	4	9	13
Involution melancholia .....	69	327	396	3	5	8	33	145	178	32	160	192	..	15	15	1	2	3
Dementia praecox .....	2,942	4,340	7,282	7	15	22	1,304	1,620	2,924	1,577	2,636	4,213	27	49	76	27	20	47
Paranoia or paranoid conditions .....	40	161	201	..	1	1	20	72	92	17	83	100	2	4	6	1	1	2
Epileptic psychoses .....	126	182	308	..	3	3	68	77	145	54	97	151	4	2	6	..	3	3
Psychoneuroses and neuroses .....	70	196	266	9	8	17	48	134	182	11	44	55	..	7	7	2	3	5
With psychopathic personality .....	127	201	328	11	29	40	72	109	181	40	63	103	..	..	..	4	..	4
With mental deficiency .....	128	337	465	6	19	25	67	126	193	55	187	242	..	5	5	..	..	..
Undiagnosed psychoses .....	63	135	203	3	4	7	39	53	92	25	75	100	1	2	3	..	1	1
All others including those without psychosis .....	119	166	285	11	30	41	62	63	125	38	61	99	3	5	8	5	7	12
Total .....	5,293	8,658	13,951	124	239	363	2,616	3,714	6,330	2,422	4,500	6,922	76	155	231	55	50	105

\*At end of year or at time of discontinuance of treatment.

TABLE 11. PER CENT DISTRIBUTION OF REPORTED CONDITION BY PSYCHOSES OF PATIENTS TREATED IN OCCUPATIONAL THERAPY  
DEPARTMENTS OF THE NEW YORK CIVIL STATE HOSPITALS, DURING THE FISCAL YEAR ENDED JUNE 30, 1931

Psychoses	Total number			Recovered			Improved			Unimproved			Died			Unreported		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Senile .....	78	190	268	*	..	0.4	*	25.3	31.7	*	64.2	59.3	*	8.9	7.1	*	1.6	1.5
With cerebral arteriosclerosis.....	200	252	452	1.0	1.6	1.3	57.0	40.9	48.0	36.5	50.0	44.0	5.0	7.5	6.4	0.5	..	0.2
General paralysis .....	449	221	670	0.7	1.4	0.9	51.2	48.9	50.4	43.2	47.5	44.6	3.6	2.3	3.1	1.3	..	0.9
With other brain or nervous diseases	95	104	199	*	1.0	2.0	*	46.2	46.7	*	50.0	48.7	*	2.9	2.0	*	..	0.5
Alcoholic .....	270	130	400	10.0	11.5	10.5	59.6	60.0	59.8	28.5	25.4	27.5	1.1	2.3	1.5	0.7	0.8	0.8
Manic-depressive .....	512	1,716	2,228	7.4	5.9	6.3	61.7	54.2	55.9	28.7	38.2	36.0	1.4	1.1	1.2	0.8	0.5	0.6
Involution melancholia .....	69	327	396	*	1.5	2.0	*	44.3	44.9	*	48.9	48.5	..	4.6	3.8	*	0.6	0.8
Dementia praecox .....	2,942	4,340	7,282	0.2	0.3	0.3	44.3	37.3	40.2	53.6	60.7	57.9	0.9	1.1	1.0	0.9	0.5	0.6
Paranoia or paranoic conditions...	40	161	201	..	0.6	0.5	*	44.7	45.8	*	51.6	49.8	*	2.5	3.0	*	0.6	1.0
Epileptic psychoses .....	126	182	308	..	1.6	1.0	54.0	42.3	47.1	42.9	53.3	49.0	3.2	1.1	1.9	..	1.6	1.0
Psychoneuroses and neuroses .....	70	196	266	*	4.1	6.4	*	68.4	68.4	*	22.4	20.7	..	3.6	2.6	*	1.5	1.9
With psychopathic personality.....	127	201	328	8.7	14.4	12.2	56.7	54.2	55.2	31.5	31.3	31.4	..	..	..	3.1	..	1.2
With mental deficiency .....	128	337	465	4.7	5.6	5.4	52.3	37.4	41.5	43.0	55.5	52.0	..	1.5	1.1	..	..	..
Undiagnosed psychoses .....	68	135	203	*	3.0	3.4	*	39.3	45.3	*	55.6	49.3	*	1.5	1.5	..	0.7	0.5
All others including those without psychosis .....	119	166	285	9.2	18.1	14.4	52.1	38.0	43.9	31.9	36.7	34.7	2.5	3.0	2.8	4.2	4.2	4.2
Total .....	5,293	8,658	13,951	2.3	2.8	2.6	49.4	42.9	45.4	45.8	52.0	49.6	1.4	1.8	1.7	1.0	0.6	0.8

\* Percentage was not computed when base was less than 100.

## BOOK REVIEWS

### **Normal Youth and Its Everyday Problems.** By DOUGLAS A. THOM, .

M. D. 368 pages. Price \$2.50. D. Appleton and Company, New York.

Another book has been written by Dr. Douglas A. Thom of Boston whose previous books on children have prepared the way for this sensible, matter-of-fact volume on the adolescent period. It has been written for parents, teachers and those who deal with and wish better to understand unfolding personalities. Dr. Thom's rich experience particularly qualifies him for the task and the expectations raised by his other books are fulfilled in this volume. The complete title is "Normal Youth and Its Everyday Problems." Dr. Thom recites many case histories, and in a few everyday words shows the problem, its genesis, and the simple common-sense avenues to help, and in many cases to complete readjustment. It is an excellent book.

It is refreshing to see the level upon which Dr. Thom works. Intangibles are noticeably absent and you realize that the situations have been studied, handled and guided by a wise, patient, kindly philosopher who gives to his patients the wealth of his experience and imparts his knowledge to his readers. His book makes one want to help these struggling atoms, buffeted as they sometimes are by the winds of misunderstanding which often come from the unrest in the parental breast. It is earnestly recommended to those who wish to understand the conflicts which beset boys and girls between 12 and 20. The growing personalities, some having inferior and mediocre minds, some with superior intellects and others of normal minds with special traits, desirable and undesirable, all are glowingly set forth in word pictures. In these, readers will find delineated children similar to those with whom they have labored. The book gives instructions in the care of youthful persons, assists those who are groping for solutions, stimulates others to further efforts, and not the least, teaches parents to see themselves.

PARSONS.

### **Creative Mind.** By C. SPEARMAN, Ph. D., Professor of Psychology, University of London. Price \$2.00. D. Appleton and Co.

"Creative Mind" is a first volume in the important series, "The Contemporary Library of Psychology," the general editor of which is Professor Francis Aveling, University of London. Further volumes now in preparation are: Personality and Will; Motives and Values; The Laws of Psychology, etc. These will give to the reader a comprehensive view of the whole field of psychology. The volumes will be written simply and clearly in an interesting, balanced and authoritative manner. Each of them will

deal with a specific and definite topic capable of independent treatment as a single chapter of the general subject. The individual volumes will be contributed by leading authorities on both sides of the Atlantic.

"Creative mind," the author states, "is that which converts the potential things into the actual things, as light turns potential color into actual color." The problem is outlined in Chapter one, as how far and in which way the mind displays the power to create. Current doctrines are then discussed dealing with an explanation, by imagery; by combination; by form; by behaviorism and by psychoanalysis.

The author not satisfied with existing explanations, essays one of his own and in chapter three starts out with a series of principles under the title, "Qualitative Principles of Knowing," listing three as follows: "Principle of Apprehension of Experience," i. e., a person tends to know his own sensations, feelings and strivings; "Principle of Relation," or, when two or more items are given, a person may perceive them to be in various ways related; and third, "Principle of Correlates," formulated as, when any item and a relation are presented to mind, then the mind can generate in itself another item so related. These three are symbolized and compared by means of figures, see text page 24.

Quantitative principles or laws are then described in Chapter four which will be quoted without comment, as,

"Every mind can be regarded as keeping its total output constant in quantity, however varying its quality.

"The occurrence of any mental event inclines it to occur subsequently.

"The occurrence of any mental event produces an influence opposed to its occurrence afterwards. (At first glance these last postulates are contradictory but the author clears the situation.)

"The energy of the mind is partly under the control of the will."

Having developed a background of definitions he then proceeds to illustrate his thesis by describing five achievements of pictorial art, namely; truth, beauty, emotionality, exaggeration and self-expression.

A brief chapter on "Psychological Analysis" follows.

Further chapters develop illustrations using other fine arts, scientific invention and discovery and behavior.

The author discloses a deep knowledge of his subject and the paintings selected bring out his points admirably.

The volume aims to make us better acquainted with the creative powers of the mind and should be helpful to those who are trying to understand how to readjust and train those mentally ill.

It seems to the reviewer that this book should be exceedingly valuable to all interested in the scientific, psychological approach to occupational therapy.

GRAY.

**Lectures on Psychiatry.** By E. D. WIERSMA, M. D. 610 pages. 143 illustrations. Price 25 s. net. H. K. Lewis & Co., Ltd., London, 1932.

The contents of this book represent a series of lectures on psychiatry which were delivered by Prof. Wiersma in a course at the University of Groningen.

The author's teaching and the writing of this book have been guided by the firm conviction that the material and psychical worlds differ only in external form, not in essence, from each other. Both spheres are governed by similar laws.

A great deal of space is devoted to the investigation and the phenomena of the degree of consciousness, which can be demonstrated with every psychosis in disturbances of perception, of images, of emotions, or of volitional manifestations.

The reciprocal relationships between psychiatry, neurology and psychology, in the understanding of mental function, are well demonstrated.

Various chapters are devoted to aberrations in the sensations and perceptions, aberrations in the actions and manifestations of will and aberrations in the regions of ideas and emotions. Between health and disease there is in reality only a difference of degree. The traces of almost all psychical aberrations are to be found in normal life.

The development of the individual, of the building up of the personality is dependent on both the environment and the disposition. The personality shows itself in the bodily build, in the physiological functions and in the mentality.

A number of interesting experiments are quoted demonstrating primary and secondary mental functions.

Many of Wiersma's conclusions as to personality make-up were derived from statistics arrived at by means of the questionnaire method. The reviewer feels that this chapter is not only dull but confusing. The author's classification of personality types is not unlike Kretschmer's, only he lacks the German's clear cut method of painting human personalities. In Wiersma, one feels that phantoms are being described, and it is quite possible that the questionnaire method is responsible for this. Physical types are divided into the fine and slender, the thickset, and the coarse and robust types. Temperamental types, into the phlegmatic, sanguine, passionate, choleric, sentimental, nervous, amorphous and apathetic types. The reviewer finds this kind of nosology very unsatisfactory.

The reviewer considers the psychological experiments quoted in this book not only extremely interesting but valuable. This angle of psychiatry is too often ignored.



Nearly all aberrations of consciousness whether organic, functional or psychogenic are the result of greater or less "sinking-in of consciousness." The impressions or ideas on which attention is concentrated, acquire a higher degree of consciousness. If the attention of consciousness is not directed to one single content of consciousness, but is distributed over many, then none of these acquires a higher degree of consciousness. In that case we speak of a diffuse consciousness or generally low degree of consciousness. Many contents of consciousness just cross the threshold but soon disappear again; they are not vivid and intensive, have little influence on other contents of consciousness, and their psychical activity is extremely small. Fechner has compared this to a liquid surface, on which only small wavelets are seen. Normally this occurs in drowsiness, sleepiness, fatigue and sleep. There is then a general "sinking-in of consciousness."

Wiersma lauds the value of *rutonal* (phenylmethylbarbituric acid) in the treatment of epilepsy. He feels that it works to better advantage than luminal. This preparation is much less poisonous. It is given in 200 to 600 mgr. and upwards daily. The heboration and dream states seldom occur with this drug, not even after prolonged use. The author claims that patients who were admitted in a very forlorn condition, in great heboration, and with many signs of epileptic dementia, and who, in spite of bromide salts and the use of luminal, were still subject to a recurrence of the fits, improved visibly within a few weeks after the use of *rutonal*.

The book lacks all reference to the important findings of dynamic psychiatry. Child guidance, occupational therapy and psychiatric social work are not mentioned at all.

The paragraphs on the relationship between the instinctive life and mental conditions are superficial and dull. Homosexuality is dismissed in the following words: "Homosexuality is a sexual inversion. There is a sexual inclination towards the same sex. In all the above-mentioned cases (of sexual perversion) there is a wrong direction of the interest, which, like every disposition, is congenital. . . . In addition to the wrong disposition there is a weakness of will, which stamps these patients as psychopaths." All of this shows that Wiersma is neither conversant with the psychopathology of homosexuality nor has he any clear idea of the concept of psychopathy.

There is a great deal of interesting experimental work described on disturbance of perception, memory, thought, and the emotions. The chapter on lower and higher types of reflex activity is well worth reading.

If one is especially interested in experimental psychology as applied to psychiatry, Wiersma's book offers a good introduction.

BOLTZ.

**Race Mixture.** By EDWARD BYRON REUTER. 224 pages. Whittlesey House, McGraw-Hill Book Company, Inc., New York.

The negro question is always with us. New phases of the relationship of the white and colored races are constantly coming to the front and demanding attention. Any study, therefore, that reveals new data or presents original ideas on the race problem is welcomed by the American public.

The book before us comprises several essays which were written at different times. Three of these essays, namely: "Sex Distribution in the Mulatto Population," "The Legal Status of Racial Inter-marriage," and "Color and Achievement" are statistical and descriptive. The others are interpretive and explanatory. Some of the chapters have previously appeared in various magazines. Although each essay is complete in itself, the assembled group constitute a fairly unified treatment of the general subject.

As indicated by the title "Race Mixture," the author dwells particularly on the position of the mulatto as a hybrid type. He regards the mulatto as distinctly superior to the negro of full blood and sets forth many facts in support of his views. Such superiority does not arise from a single factor but is a result of several influences. In the first place, the mulattoes are descended from the best of the negro race. This fact is in accord with the general rule: "The choicer females of a subject race have always been selected as the concubines and auxiliary wives of the master race." It appears that mulattoes prefer to marry mulattoes and thus tend to maintain their superior status. In the second place, the mulattoes occupy an intermediate place between the whites and blacks. The white man treats the mulatto as inferior but the negro treats him as superior. The social prestige of the mulattoes gives them an advantage in mating over the negroes of full blood. The most capable negro men marry mulatto girls. The mulatto group continually gains through this process of selection.

The author believes, however, that with the changing attitude toward the black man and with the increasing opportunities for education for all types, will come a leveling up in status. The differences between the mixed bloods and the pure bloods will tend to diminish. He expresses great faith in the capacity of the black man for cultural development.

In the closing chapter the author sums up his views of the place of the mulatto in the following words:

"The mixed blood is thus an unadjusted person. His immediate group has no respected place in the society. In ideals and aspirations he is identified with the culturally dominant group; in social rôle and cultural participation he is identified with the excluded group. He is, in consequence, a man of divided loyalties. It is only when the resulting conflict is resolved by the mixed blood's accommodation to the socially defined place—mem-

bership in, and leadership of, the backward group—only when he identifies himself with it, participates in life on that basis, and finds the satisfaction of his wishes in that group organization that he escapes the conflict resulting from his divided heritage. It is only through an identification of himself with the social group to which the social definitions consign him that he can find a tolerable life and develop a wholesome personality.”

POLLOCK.

**Common Sense and the Child.** By ETHEL MANNIN. 308 pages. Price \$2.00. J. P. Lippincott Co., Philadelphia.

“The child should never be compelled to do anything.” This, briefly, is the plea of Miss Mannin’s book, in which after a thorough discussion of various aspects of child life, she advocates a new education with freedom as its basis. The problems of children she groups under the headings of cleanliness, discipline, clothes, food, sleep, sexual life, emotions, religion, punishment, sins, etc. Each of these is separately considered by the author, and in each instance she advocates that children in their formative years be left to themselves to do as they please; because (in her own words) “In freedom they grow to a realization of the fact that for their own comfort, the law of give and take pays.”

She advocates that the child be left to enjoy life in its own way, which will not be the adult way, and that on nearing the adolescent period, it will then be ready and capable of assimilating an education such as it desires or is adapted for, and will become a better adult. The problems occurring in children are always due to what Miss Mannin labels “problem parents” who themselves need assistance in the management of their lives; and further she concludes that children are not “good or bad,” but “happy or unhappy.”

Throughout this volume, cases are quoted, showing a few of the good results obtained by means of this “new education” in some English schools; although the movement is still in its infancy and statistics are not given. The volume is outspoken, and because of its radical departure from accepted standards of education undoubtedly will meet with considerable discussion and criticism from educators and parents.

It is very difficult at present to visualize such a Utopia as Miss Mannin would desire. Against it there are many arguments; in its favor only a few at present. Moreover, there would still be the problem of obtaining the necessary assistance from those individuals described as “problem parents.” Perhaps in a few more decades, such an educational system may be formulated, although this possibility at the present appears remote.

SMOLEV.

**Lives in the Making.** Aims and Ways of Character Building. By HENRY NEUMANN, Ph. D., Leader of the Brooklyn Society for Ethical Culture. 370 pp. D. Appleton and Company, New York.

It frequently happens that when an author writes a preface he will hide somewhere among the few paragraphs the real kernel of his thought expressed in very simple words. This is a perfectly reasonable thing to do as in most instances volumes are after all largely an expansion of a single idea. As this book came from a leader in ethical culture there was naturally a tendency towards a text. Whether or not he will agree that his comprehensive treatise of life could be condensed into a sentence of six words is uncertain. However, when he says, "Morals are also related to morale," he does bind his thesis together with a very definite thought.

It is rather refreshing to pick up a volume treating the complexities of modern social life from the pen of one interested in life on a purely religious and cultural plane. At no time does he permit you to forget that the spiritual phases of this subject are paramount nor does he fail to maintain this idea when drawing upon the wisdom of other authors. Few writers on sociology have commanded so much from ancient and classical thought as expressed in prose and poetry.

It is unusual to find in modern technical literature chapters introduced by Shakespeare, Goethe, Matthew Arnold, Milton, etc. The strange thing about it is that his quotations so delightfully epitomize the context.

In one of his chapters he boils down into a short sentence the interrogation of generations when he asks: "Lives are to be saved from evil, but for what good?" He expresses very definitely what has been in the minds of practically all those connected with social service either in its practical application or its theory, and from this on he sets about to answer the question. Whether it be considering better homes, mental hygiene, community help, religion or personality phases, he strikes out definitely to enlist your interest in the possibilities of higher cultural levels.

Psychiatrists will find his chapter on mental hygiene interesting, not from the standpoint of their own conception, but as seen through the eyes of a layman who values this science highly and who, possibly because he is not of the fraternity, has a rather clear perspective of its relation to other fundamental elements in the general scheme of life.

Anyone expecting to find this subject expressed in the language of metaphysical, occult or ultra-cultural sects will be happily disappointed. Every facet of his thought shines forth in simple and direct phraseology. In fact, it is rather surprising to find him expressing himself in modern tabulations and then to pass from this most prosaic form of expression to rather better than the average poetic language; and it is quite as interesting to note that

in so many instances a couplet from one of the great seers in the higher realm of literary expression is used so aptly to express what had almost verged on statistics.

Dr. Neumann takes advantage of the thought of others with unusual frequency. However, it apparently has been done not to fill up the page but to give the reader the best thought available, even at the expense of the privilege of enlarging upon his own observations. This very fact, when the book is taken as a whole, is possibly one of its great assets. It not only makes for unusual variation, but very definitely places the volume in the authoritative class.

It is just the type of the book that will find its way into that five-foot shelf placed so conveniently at the disposal of those engaged in social work. It is very sure to be found gracing this shelf at short courses, summer schools, institutes, as well as conference tables.

ROBERT A. YORK.

**Nursing Psychological Patients.** By MARY CHADWICK, S. R. N., with a foreword by David Forsythe, M. D., D. Sc., F. R. C. P., Charing Cross Hospital. Pp. 256, index and bibliography. Price \$2.50 postpaid. George Allen and Unwin, Ltd, London.

Miss Chadwick is well known for her interest in psychological medicine and her approach is modern and sound. Though the book is addressed to nurses, it is one that may be read with profit by physicians also. It begins with an introduction covering 34 pages, in which is traced the developments in our knowledge of psychoneuroses from classical times through the middle ages to the present time including the contributions of Wier Mitchell, Crile and Freud. Chapters are devoted to hysteria; neuroses and obsessional neuroses; neuroses of childhood; and psychogenic illnesses prevalent in men and in women. Her emphasis is upon the constitutional factors and she sees environment as the predominant factor in conditioning the child for neuroses in later life. The book should be read by nurses who are interested in the care of psychiatric patients for it will give them a helpful insight into emotional conflicts and will enable them to handle their patients wisely. Another group to whom the book should appeal is the social workers'; particularly the chapters on neuroses of childhood will be useful to them. Following each chapter is a list of books recommended for reading in connection with the subjects treated, all of which are recent publications and there is also a general bibliography.

HUTCHINGS.



**Psychopathic Personalities.** By EUGEN KAHN. Translated by H. Flanders Dunbar. 521 pages. Yale University Press, New Haven.

There is a breadth of vision about the contents of this book that is immediately noticeable in the first few pages and that continues to be maintained to the last page. It is the type of book that ordinarily appeals to the scholar who wishes to gain a comprehensive impression of the multiple views that prevail in a topic that is not yet clearly understood. It appears that Kahn has achieved a difficult task, for he has assembled a vast amount of material from widely different schools of thought and has presented the many viewpoints with fairness. Although his experiences with psychopathic personalities have been extensive and intensive, he subserves his own personal views to those of others, yet at the same time the reader knows what Kahn's opinions are.

It is not the type of book that lends itself to review or to abstraction, principally because it comprises a wealth of documents that serve to orient the reader with respect to the general theme "psychopathic personality." It does not lay claim to any radical departures from current opinions, but it does tend to give the careful student an orientation that should enable him to enter upon new investigations with a sound and rational background.

The material of the book is presented in an orderly manner. That in itself is noteworthy, for anyone who has the facility, not to mention the temerity, for organizing a profusion of disorganized data deserves no little token of appreciation. It would not be difficult to show certain alleged weaknesses in the contents of the book, but they are really not faults of the book; rather they represent the many unsolved problems encountered in the general topic "psychopathic personality." For instance, the clinico-descriptive classification given by Kahn might occasion some adverse comments, if it were not understood that it is simply a working arrangement. He records 16 different groups, the nervous, the sensitive, the anxious, the compulsive, the excitable, the hyperthymic, and so on down to the eccentric type. In subsequent pages he devotes much space to a detailed description of these types, the meanwhile giving credit to the observations of many other investigators.

There are three principal viewpoints from which Kahn considers psychopathic personalities, namely, from the point of view of (1) impulse, (2) temperament and (3) character. With these attitudes in mind Kahn attempts to introduce a dynamic understanding; he tries to lift the several clinical types out of the welter of static description. But there is almost a fatalistic tone, when Kahn says that "we are still unable and will perhaps always remain unable to change the constitutional structure of psychopathic personalities." However, since psychopathic individuals possess both

a psychopathic and a non-psychopathic *Anlage* it seems possible, according to Kahn, to educate the individuals to understand themselves. The book is weak in point of therapeutic suggestions.

The book lacks a topical index, which should prove serviceable in a monograph that is so heavily documented.

Dr. Dunbar merits distinction in the translation of the many difficult passages that infiltrate the book from cover to cover.

HINSIE.

**The Mind in Conflict.** By RICHARD AMARAL HOWDEN, with an Introduction by William Brown, M. D., D. Sc., F. R. C. P. 79 pages; Oxford University Press, London.

This short treatise has been written by a layman for those who desire a simple explanation of modern medical psychology, its terms, aims, and possibilities. The author, who states that he has had personal experience of the benefits of psychotherapy, treats his subject enthusiastically, though not always grammatically. In simple, often colloquial language he gives clear explanations of the terms conscious, preconscious, unconscious, complex, conflict, repression, rationalization, neurosis and others, and emphasizes the importance of repressed mental conflicts in the causation of mental illness. The author makes use of a wealth of everyday metaphors and similes to make his meaning clear, and by frequent repetition drives his points home. Well chosen quotations from Dr. McDougall give excellent pictures of the "normal" and the neurotic character, and the influence of heredity, education and environment is discussed. In a chapter on "The Treatment of Nervous and Mental Illnesses," we are given short descriptions of free association, dream analysis, and hypnosis, and the value of re-education is stressed.

Several pages are devoted to the development of the sex urges, and the need for proper sex instruction of the child. Most of this material is sound, but the author shows some confusion over the terms, *auto-erotism* and *narcissism*, and his remarks on masturbation are inadequate. He says that "masturbation . . . is a result of fear of life," and does not explain the relationship to the nuclear complex.

In the last chapter which deals with the prevention of mental illness the author emphasizes the importance of proper training of the child who, as he says "is never too young to begin to learn." No attempt is made to give details of such training but a bibliography is appended in which, among others, two books on child guidance are recommended.

On the whole the book justifies the statement in the introduction by Dr. William Brown, that "it gives just the kind and amount of information on the subject that many educated laymen should know."

PATRICIA STEEN.

**Business Letters: Functions, Principles, Composition.** By RALPH LESTLIE JOHNS, M. A., Ed. M. 347 pages. The Gregg Publishing Company, New York, Chicago, etc.

The late George Eastman once made this observation in regard to letter-writing: "Efficiency in transacting business requires that one observe, learn, remember, think, form habits, exercise will power, influence the activities of others—in short, demonstrate intelligence. If you write letters that will accomplish these purposes, the world will mark you as a successful business man or woman."

In State business and in the management of institutions, good letterwriting is just as important as in the commercial world. The ability to express a message clearly in few words and to secure the results desired with complete harmony and goodwill is a most important gift or acquisition. In most cases, such ability comes only through training and study. If skill in letterwriting has not been learned in school, it can best be acquired by the use of books such as the one before us, in which both theory and practical applications are set before the reader in attractive style. The book is also adapted for use as a textbook. Anyone who would write better or more effective letters will do well to consult this manual.

POLLOCK.

**The Sex Factor in Marriage.** By HELENA WRIGHT, M. B. B. S., with introductions by A. Herbert Gray and Abel Gregg. 122 pages. Illustrated. Price \$2.00. The Vanguard Press, New York.

The author of this book is a specialist in gynecology. She stresses the fact that sex is the fundamental factor in marriage and that dissatisfaction of either husband or wife in sex relations is a common cause of unhappy marriages and frequently leads to divorce. Generally, the difficulty arises from lack of knowledge or from erroneous ideas. Until recently authoritative information on the subject was difficult to obtain, as the open sale of frank books on sex questions was suppressed in this country.

The present more liberal attitude ushered in by decisions of Federal courts has brought out some meritorious treatises of which the work before us is one. The book is written in plain but scientific language and deals with various sex topics without reservation. If married couples could be guided by its precepts there would be less infidelity, fewer separations, and many more happy homes. It is also probable that the number of neuroses arising from ungratified sex longing would be greatly reduced.

POLLOCK.

**Building Personality in Children.** By GARRY CLEVELAND MYERS, Ph. D.  
360 pages. Price \$2.50. Greenburg, New York, 1932.

This is an excellent book which should be of the greatest value to parents, guardians and educators. It will make many readers wish that the volume could have been available for the guidance of their own parents, so clearly does it indicate measures for the development of that inestimable boon, a good personality.

Starting out with due emphasis on the importance of correcting nutritional and general physical defects whenever possible, the author points the way to proper handling of children with irremediable handicaps, so that the child's personality may not be warped by spoiling, excessive sympathy or unconscious cruelty.

The work is very wide in scope and every factor of importance in the building of personality is discussed, sometimes from a novel viewpoint. Although we are all aware of the prepossessing effect of good posture, alert interested eyes, an attractive smile and a pleasant voice, few people deliberately try to cultivate these attributes. The author reminds us that it is not too late to improve ourselves, especially as regards the voice. He cites the psychological annoyance from rasping tones and, urging the acquisition of more pleasing voices, quotes Carl Seashore: "A good voice is one of the main elements in self-confidence and success and social intercourse. It is at once a mainstay and a key to personality."

An excellent chapter on speech deals with every aspect of the subject from delayed speech to overtalkativeness, and ends with practical and pithy advice on the correction of speech defects. Dr. Myers states that the reduction of emotional tension in the home and school is the essential point in treating stuttering, though mechanical drills help some children. Considerable space is given to a discussion of the child's need for a feeling of security, and we are told how to avoid pitfalls of insecurity from jealousies, unwise threats and punishments, and insufficient sex education. In the concluding chapters some everyday problems such as timidity, truancy, lying and sulking are dealt with in a constructive way, and plans are outlined for the treatment of night terrors, thumb-sucking and bed-wetting.

The book is well written in clear and simple English, illuminated by many flashes of humor, and one lays it down with a feeling of contact with an author of great personal charm, wide sympathy and a thorough understanding of his subject.

PATRICIA STEEN.

**Mental Nursing Simplified.** By NAPIER PEARN, M. R. C. S., L. R. C. P., D. P. M., Deputy Medical Superintendent, Cane Hill Mental Hospital. Pp. 304. Bailliere, Tindall & Cox, London.

The author says that his book is meant to be used as a supplementary text in connection with the "Handbook for Mental Nurses" upon whose plan it is patterned. Its aim appears to be to explain and fix in the nurse's mind facts that she will need in writing examinations.

In its 20 chapters it touches on anatomy, neurology, psychology, psychiatry, medicine, hygiene, first aid, sick nursing, psychiatric nursing, how to study, what to study and how to pass examinations.

The material is much simplified and often informally presented. Throughout the book there are many rhymes and jingles, together with other "aids to memory." The following is an example:

"In giving medicines—

Keep your finger on the cork when you are shaking,

Remember that the label you must read,

No matter what it is the patient's taking.

And never put the medicine in their feed.

Never let the patient have the bottle.

When pouring keep the labelled side on top.

A drop of water helps pills down the throttle.

Give exactly what is ordered, to the drop.

After every dose you wash the glass with water

In a basin, with the bottles on a tray

If the patient will not take the stuff he ought ter

You'll simply have to throw the dose away.

A nurse, if even only on probation,

Can state if any medicine's refused.

Forbid drugs brought by any fond relation,

And never mind if you *do* get abused."

The English nursing technic appears to differ somewhat from ours. But there are many worthwhile suggestions, as in Chapter 4, *The Duties of a Nurse*; Chapter 18, *Some Special Nursing Points*; and in Chapter 8, *Observation of Cases*.

This book would be of value, principally, as a reference. It could probably be studied to advantage by a nurse wishing to review for State Board examinations.

M. E. COLE.



**The Wild Boy of Aveyron.** By JEAN-MARC-GASPARD ITARD. Translated by George and Muriel Humphrey. 101 pages. 1932. The Century Co., New York.

Surely all students of the mental sciences are familiar with the name of Itard and know that at about the beginning of the nineteenth century this young medical man, filled with the enthusiasm of his time, became interested in a wild boy and undertook to train him.

From time to time uncivilized humans had been found roaming the forests of Europe. The capture of these "savages" invariably stimulated much speculation and excitement. In this respect the wild boy of Aveyron was no exception. Pinel openly expressed doubt as to the trainability of the lad. After careful observation he felt convinced that this 11-year-old boy was incapable of profiting from instruction. Itard, undaunted by these views, ventured to train and civilize the boy, to make him a useful member of society.

Itard set forth an account of his work in two reports both of which are included in the current translation. The book offers a fascinating account of the noble efforts of this indefatigable young physician, written in a simply yet forceful style. In his daily labor with an apparently feeble-minded boy, he was contriving a teaching pattern which has guided at least one phase of our modern education. Seguin, a pupil of Itard, followed many of the premises laid down by him.

The translators have rendered a genuine service in making the record of this classic experiment available to American readers. The report proper had been prefaced by a very creditable introduction.

EUGENE W. MARTZ.

**Man and Microbes.** By STANHOPE BAYNE-JONES, M. D. 128 pages. Price \$1.00. The Williams & Wilkins Co., Baltimore, Maryland.

This is one of the Century of Progress Series in connection with the International Exposition to be held in Chicago, 1933.

In the small space of 128 pages the author has achieved his seemingly impossible goal of giving "microbes their due, indicating their useful and essential activities as well as their devastating effects." This book might well serve as a model of popularization. It is written in a clear, easy style that avoids being "high-brow" on the one hand or melodramatic on the other. Numerous apt analogies taken from everyday life drive home vividly the points made. Although the book is compact it has ease and balance. Dr. Bayne-Jones occupies an authoritative position in bacteriology by virtue of his research contributions and his experience as a teacher.

The illustrations are well chosen and the book is a fine specimen of the publisher's art. It can be highly recommended to those who would know something of the activities of microbes.

KOPELOFF.

**The Medical Value of Psychoanalysis.** By FRANZ ALEXANDER, M. D.  
247 pages. Price \$2.75. 1932. W. W. Norton & Co., Inc., New York.

It is the opinion of Alexander that psychoanalysis has been living, for about 30 years, a peculiar, isolated existence on the borderline of medicine and of the natural sciences, and that this borderline existence is not due entirely to the unreceptive attitude of medicine toward psychoanalysis, for psychoanalysis itself has also been undecided as to where it belongs.

In this book Alexander aims to clarify the problematic relationship of psychoanalysis to medicine and to dissipate the prejudice against psychoanalysis in biological and medical circles.

The material of the author's discussions provides a survey of the whole subject of psychoanalysis, and for the most part is presented in a simple, direct manner. There is a preface, five chapters, and an index.

In Chapter one, "Psychoanalysis and Medicine," the development of psychoanalysis is traced; fundamental characteristics of psychoanalysis are formulated; the psychoneurosis is differentiated from the psychosis; the various phases of resistance of medicine to psychoanalysis and psychoanalysis to medicine are pointed out, and psychoanalysis as a therapeutic method is discussed.

The author indicates that psychoanalysis started within medicine as an attempt to cure hysterical symptoms by psychological means, and that as far as it is therapeutic it belongs to medicine. Also, that psychiatry, an acknowledged part of medicine has assimilated much from psychoanalysis, and by means of it, has advanced beyond its merely descriptive stage and has become an explanatory science. Because of this assimilation Alexander assumes that psychiatry shares the fate of psychoanalysis and loses the respect of the rest of the medical world. Perhaps this assumption is debatable. At least, psychiatry need fear no such fate, provided those engaged in this field of medical endeavor will remember, that primarily, they are physicians; will continue to consider and treat the individual patient from a broad psychobiological approach, and will recognize and use psychoanalysis and its principles only as a valuable aid to a better understanding and treatment of the individual patient, instead of adopting it as a panacea for all human ills.

To Alexander the significance of psychoanalysis in its relation to medicine is manifest in the following two accomplishments: (1) "With the help of a technique specifically adapted to the nature of psychic phenomena it has developed a consistent and empirically founded theory of the personality, fit to serve as a basis for the understanding and treatment of mental disturbances. (2) It has given a concrete content to the philosophic postulate that living beings are psychobiological entities, by investigating in de-

tail the interrelation of physiological and psychological processes. The greater part of these investigations must, however, be left to the future for completion."

The second chapter, "The Present Status of Psychoanalysis as a Theoretical and Therapeutic System" presents a clear and concise description of the various psychoanalytic theories including that of repression, infantile sexuality, instincts, the oedipus complex, etc., and an excellent discourse on the development of ego psychology and the theoretical foundation of the psychoanalytic technique. Much of the obscurity and technicality of psychoanalytic literature is dispensed with.

Alexander concludes this section with the statement "Psychoanalysis does not claim to be able to cure all forms of mental disturbance or all kinds of pathological personalities. It only maintains that all future methods of psychotherapy must be based on an understanding of the fundamental psychodynamic processes as organic medicine has founded its therapeutic measures on an understanding of the underlying physico-chemical processes. An insight into fundamental psychodynamic structure is the principal contribution of psychoanalysis to psychiatry."

In Chapter three, "Critical Considerations on the Psychoanalytic Treatment of Psychoses," the author points out the difficulties of psychoanalytic treatment of the psychoses, especially schizophrenia, and indicates, "that in the psychoses the simple and uncritical use of treatment designed for neuroses is inappropriate." He outlines a new and modified technique, but, which he states "can only be based on psychoanalytic insight." However, he would refer to this as psychotherapy to distinguish it from psychoanalytic treatment of the neurotic. One may ask why hedge on a term? Isn't psychoanalysis a form of psychotherapy? Why not call it a modified psychoanalytic technique?

Chapter four, "Psychogenic Factors in Organic Diseases," reviews the psycho-physiological interrelation in disease and the author suggests that with a clearer concept of such relationship many organic conditions can be understood and treated with greater success than with previous methods. Here we refer to a previous statement made by Alexander. "One must realize, however, that it is artificial to separate mental disease from physical disease or mental processes from physical processes, for there is in reality a permanent interrelation between them. In therapy it is not always easy to decide in which cases a psychological and in which cases a physiological approach is indicated, for the individual cannot be divided into a body and personality, since it is a psycho-biological entity." If we are to accept this statement then we can readily understand the critical evaluation and prejudice of medicine as to the so-called psychotherapist without medical training and background and the lay-analyst.

In Chapter five, "Psychoanalysis in Medical Education," Alexander blazes a trail and gives convincing reasons why psychoanalysis should become an integral part of medicine and the physician's education. He points out the difficulties encountered by the physician in securing knowledge of and training in psychoanalysis, in the past, and the financial sacrifice frequently necessitated, due to the fact that the teaching of it has been restricted to a few psychoanalytic institutes and a small group of psychoanalysts. He makes concrete, practical suggestions for undergraduate courses in psychoanalysis and psychiatry in medical schools and graduate courses in psychiatric hospitals. These suggestions are valuable and should be emphasized.

This book is a constructive contribution to psychoanalysis and medicine. It should go a long way in removing psychoanalysis from the borderline existence, mentioned by Alexander, and placing it, as far as it is therapeutic—where it belongs—in the art and practice of medicine.

WITZEL.

**The Art of Being a Woman.** By Dr. OLGA KNOPF. 295 pages. Little, Brown and Company, Boston.

Dr. Olga Knopf contributes her training and experience as a psychologist and psychiatrist, during 44 years of life, to the writing of her recent book, "The Art of Being a Woman." Born and educated in Vienna, Dr. Knopf is a former pupil of the famous psychologist, Dr. Alfred Adler. Her book, like Dr. Adler's recent book, "What Life Should Mean to You," is edited by Alan Porter to whom she acknowledges her indebtedness for the book in its present form.

Feelings of inferiority, Dr. Knopf says, are an actual expression of a dissatisfaction with the position in which an individual finds himself in striving for superiority. Whether these feelings will be beneficial or detrimental depends upon the use one makes of them, in reaching out for attainment of one's goal of superiority. If the goal is useful and reasonable of attainment and the individual has courage to pursue it in the face of obstacles, the result will be success. If the goal is fantastic and beyond reasonable bounds of human attainment, the consequent failure will resolve itself for the individual into discouragement and feelings of inferiority. This goal of superiority, the author asserts, is determined at an early age by subjective forces within the child, a conflict between his valuation of himself and his ideal character he has set up as his objective.

The substance of all difficulties in life, Dr. Knopf feels, resolves itself into three problems: 1. The problem of social adjustment (cooperation with our fellow men). 2. The problem of occupation (activities of leisure as well

as activities of work). 3. The problem of love and the relations with the other sex. Dr. Knopf believes there are no innate differences of character between the sexes and that these problems present themselves to men and women alike. She does, however, accept the fact that the conditions of life are not the same for the girl and for the boy, for the woman and for the man; that there is a different valuation of the two sexes, in favor of the masculine gender. She asserts that the proof of equality rests with the woman. "It is women that must change the opinion which men have . . . They can do it only by acting as equals and accepting the responsibilities of equals."

The author considers the relation of woman to the subject of marriage in its various aspects. She says: "In former times women had little enough choice in the matter (of marriage) . . . their only recourse if they wished for any social standing or independence was to marry." But now there has developed a new type, the bachelor woman, free and economically independent. The goals girls have set for themselves and their early environment will shape their approach to love and marriage but the ideal is early marriage, dictated by common sense.

"Marriages are entered into for two reasons; love and convenience"—never wholly one or the other, and this attitude is common to men and women alike, though women may take marriage problems more seriously than men, because their interests may be more restricted within the home. The author argues for this reason that women should have more interests outside the home to broaden and diversify their activities. The most important factor in marriage is cooperation and adaptation and this is to be secured through comradeship and equality of the two sexes. Woman's greatest task is to make the home as agreeable and productive as possible for all the members of the household. This she can do only by developing herself to the maximum degree of helpfulness through wide activities and interests within and without the home. "The art of being a woman can never consist in being a bad imitation of a man. It can consist in being equal, independent and cooperative; in understanding human nature and human capacities and in applying this knowledge first of all to oneself."

One cannot escape the impression that the book portrays rather a neurotic atypical side of life than the normal healthy relationships which we believe constitute the experience of the majority of women. The average woman would probably not agree with the author when she states: "The inferiority feelings of women and the difficulties of adjustment between the sexes . . . is perhaps the most important problem of our civilization; for the whole welfare of mankind hangs upon its solution. The sexes are living, we might say, in a vast communal neurosis." Possibly this rather depress-



ing attitude finds explanation in the following: "It has been our purpose in this book to show where mistakes have been made by women as well as by men. It is our mistakes which teach us most and in consequence it may seem that these chapters have been full of dismal histories." We must admit, however, that the subject has been cleverly conceived and logically worked out to its conclusion, and we must agree with many of Dr. Knopf's deductions. While there may be little that is new in the subject matter, there is much to hold the interest of both women and men and to stimulate further thought.

HELEN A. COBB.

## PHILADELPHIA MEETING OF THE AMERICAN PSYCHIATRIC ASSOCIATION

The City of Brotherly Love proved true to name in its reception and entertainment of the delegates to the annual meeting of the American Psychiatric Association, May 30 to June 3, 1932. The local committeemen under the leadership of Dr. Albert C. Buckley and Dr. Leroy M. A. Maeder were continually on the alert in providing for the comfort and pleasure of their guests. Superintendents of institutions in and around Philadelphia threw open their doors to interested delegates. The Merion Cricket Club tendered its golf course for the tournament of the association. Mr. Pierre Dupont entertained the members of the association at Longwood, his magnificent estate near Wilmington, Delaware, which with its marvelous gardens and splendid colored fountains constitutes a veritable earthly paradise.

Psychiatrically it was a notable meeting. President William L. Russell fulfilled the duties of his office with grace and efficiency. The business sessions were conducted with dispatch, and the elaborate program, with the exception of one or two numbers, was carried through in accordance with the printed schedule.

President Russell's address was a broad, progressive review covering the advance now being made in psychiatry, the further steps to be taken, and the part that the association should take in the new movements.

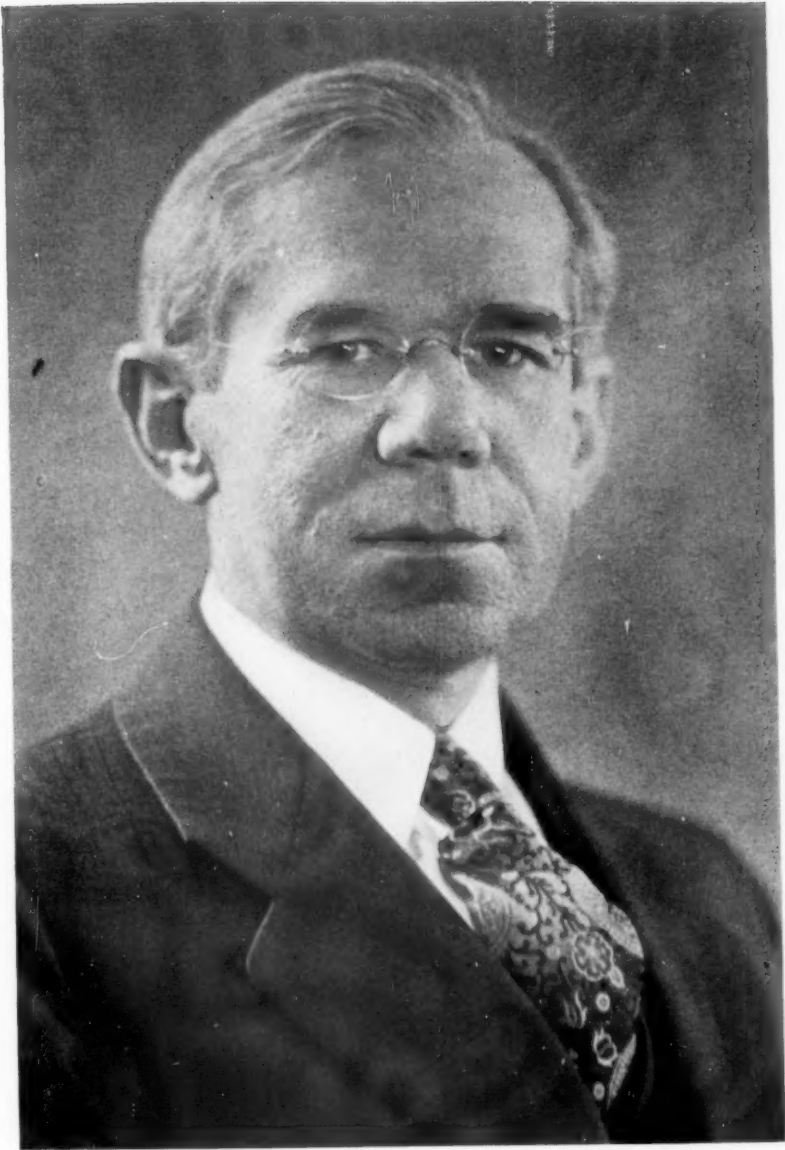
The annual address on "The Brain Problem in Relation to Weight and Form," by Dr. Henry Herbert Donaldson, of the Wistar Institute, was interesting but unsatisfactory from a scientific viewpoint. Several of the generalizations made were not warranted by the data presented.

The Section on Convulsive Disorders, under the leadership of Vice-president D. S. Renner, conducted two important sessions on May 30.

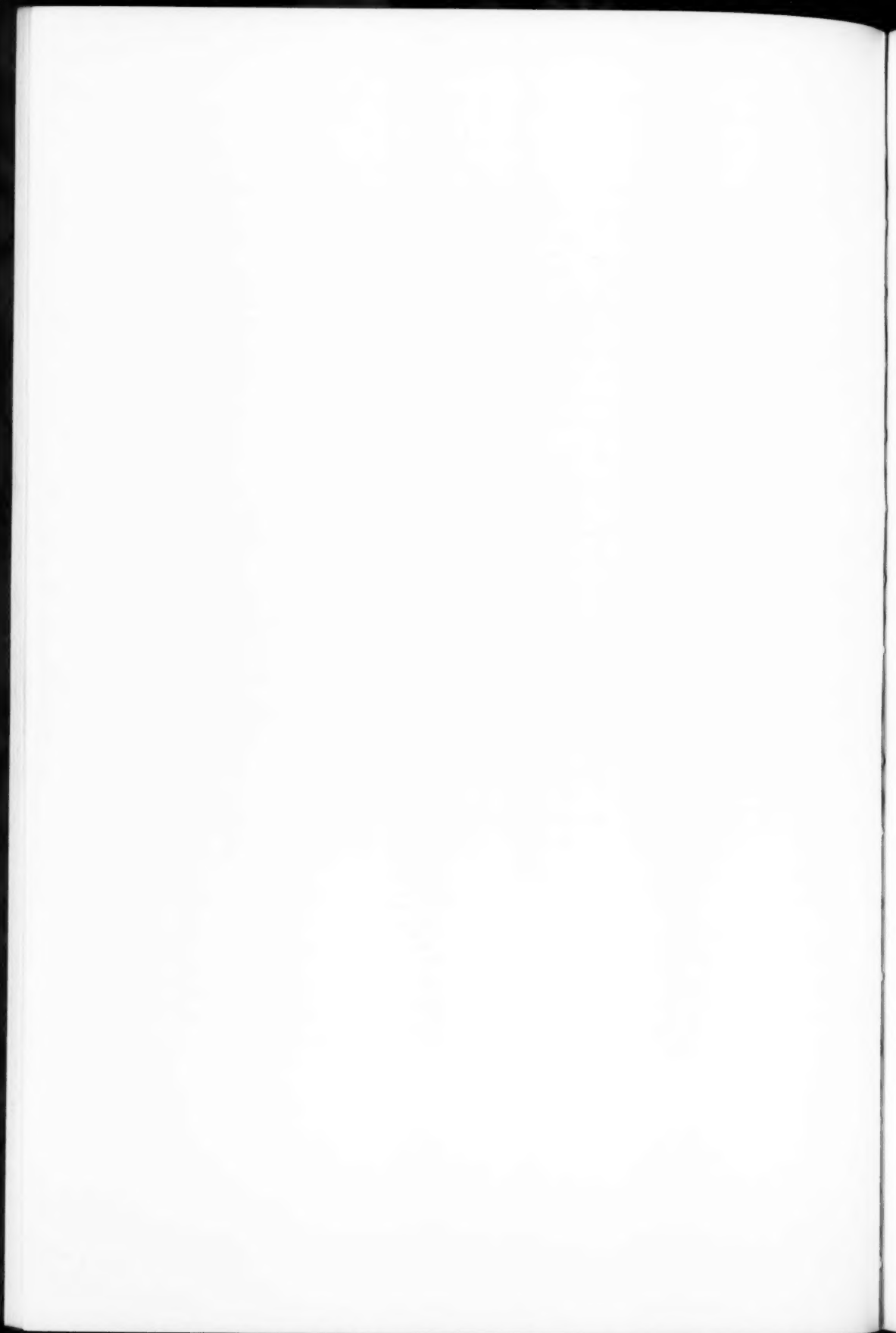
For the comprehensive general program on May 31, June 1 and 2, the association divided into two sections. A wide variety of papers were presented. Most of the readers had significant messages and presented them well. The program committee, whose head was Dr. Samuel W. Hamilton, received well-merited praise for its work.

Officers elected for the coming year are: President, Dr. James V. May, Boston, Mass.; vice-president, Dr. George H. Kirby, New York City; honorary vice-president, Dr. Morgan B. Hodskins, Palmer, Mass.; secretary-treasurer, Dr. Clarence O. Cheney, New York City.

Boston and Memphis competed for next year's meeting and the former won.



GEORGE H. KIRBY, M. D.





CLARENCE O. CHENEY, M. D.





HOWARD W. POTTER, M. D.

## **FIFTY-SIXTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION FOR THE STUDY OF THE FEEBLEMINDED**

In one accord those who attended the annual meeting of the American Association for the Study of the Feeble-minded, at Philadelphia, May 26-29, 1932, pronounced it an unusually interesting and enjoyable gathering. The attendance was not large but the members present were keenly attentive to the speakers and took a lively part in the discussion. The annual dinner featuring the presidential address of Dr. Harvey M. Watkins and a vaudeville entertainment was a notable affair.

To the president and to the program committee, headed by the secretary of the Association, Dr. Groves B. Smith, credit for the success of the meeting is due. An innovation, which met with general approval was the discussion in a full half-day session of special-class work in public schools. Problems in Philadelphia and in Newark, New Jersey, were presented by talented young women of the respective cities. The transformation of hoodlums and gangsters into right-minded young men by these resourceful special-class teachers was a fascinating story of great social import.

On Friday afternoon, May 27, the members were entertained by Superintendent E. A. Whitney at the Elwyn (Pa.) Training School; and on Sunday afternoon, May 29, by Mrs. Mollie Woods Hare at the Woods Schools at Langhorne, Pa. The privilege of viewing at first hand the modern methods of these enterprising institutions was greatly appreciated by the delegates.

Officers elected for the ensuing year are: President, Dr. Howard W. Potter, of New York; vice-president, Dr. Ransom A. Greene, of Waverly, Mass.; secretary-treasurer, Dr. Groves B. Smith, of Godfrey, Illinois; councillors, Dr. Meta Anderson, New York, and Dr. Harvey M. Watkins, Polk, Pa.

### **HASTINGS H. HART DIES**

Dr. Hastings Hornell Hart, criminologist, died at his home in White Plains, N. Y., May 9, 1932, at the advanced age of 81.

Dr. Hart was a native of Brookfield, Ohio. After studying for the ministry at Andover Theological Seminary he became pastor of the Congregational Church of Worthington, Minn., in 1880. He left the ministry to become secretary of the Minnesota State Board of Charities in 1883. Fifteen years later he became superintendent of the Illinois Children's Home and Aid Society. He became connected with the Russell Sage Foundation as director of its child welfare department in 1909. Becoming recognized as an authority in penology, his work for the Foundation was transferred to that field. In 1893, Dr. Hart was president of the National Council of Charities and Correction and from 1894 to 1901, he served as its general secretary. In 1921-1922, he was president of the American Prison Association and in 1925, vice-president of the American International Prison Congress.

Dr. Hart rendered long and noble service in the public welfare field. He contributed materially to the great improvement that has been made during the past 50 years in methods of dealing with criminals and in the building and administration of penal institutions.

### **DR. OSNATO DIES ON TRIP TO EUROPE**

Dr. Michael Osnato, director of the neurological department of the Post-Graduate Hospital of New York City, died of heart disease, June 16, 1932, at the age of 45. He was taking a European trip, had landed in Bremen from the steamship *Leviathan* and was on a boat train from Bremen to Berlin at the time of his death.

On March 7, 1914, Dr. Osnato was appointed medical deputy in charge of the Bureau of Deportation of the State Hospital Commission. He served in that capacity until June 30, 1916, when he retired to engage in private practice in neurology. He was deeply interested in research work and contributed several important articles on topics related to his specialty. At the time of his death he was consulting neurologist for the Manhattan and Central Islip State Hospitals.

## DEATH OF THOMAS B. KIDNER

Thomas B. Kidner, hospital consultant, architect, author and promoter of occupational therapy, died suddenly at the home of his son at Beechhurst, Queens, L. I., N. Y., June 14, 1932, at the age of 66.

Mr. Kidner was a native of England, and was trained in architecture and building construction at the Merchant Ventures College, Bristol, and at London Institute.

In 1900, Mr. Kidner went to Canada as an organizer under the fund for the improvement of technical education established by the late Sir William C. MacDonald, of Montreal. He was appointed vocational secretary of the Canadian Military Hospitals Commission in 1915 and in this capacity aided the development of a system of vocational rehabilitation of disabled Canadian war veterans.

In 1918, Mr. Kidner was loaned by the Canadian government to the United States as an adviser on the vocational rehabilitation of wounded soldiers. He became institutional secretary of the National Tuberculosis Association in 1919. He took an active interest in the organization and development of the American Occupational Therapy Association and served for six years as its president. Under his guidance the association prospered greatly and through his efforts, in cooperation with others, an official directory and register of occupational therapists was established in 1931.

From 1926 to the time of his death, Mr. Kidner conducted a private consulting business in hospital architecture. He was recognized as one of the leading experts of the country in this field.

The published writings of Mr. Kidner include his addresses as president of the American Occupational Therapy Association, magazine articles and small books relating to special phases of tuberculosis and occupational therapy.

## THE PSYCHOANALYTIC REVIEW

Psychoanalytic literature is enriched by the appearance of a new publication known as *The Psychoanalytic Review*. The editorial board consists of Dr. Dorian Feigenbaum, Dr. Bertram D. Lewin, Dr. Frankwood E. Williams and Dr. Gregory Zilboorg. The list of contributing editors contains many names well known in the field of psychoanalytic research. The first number includes several articles of exceptional interest. Mental hygienists in particular will do well to study a contribution by Dr. Frankwood E. Williams entitled "Is There a Mental Hygiene?" The abstracts and book reviews constitute useful sources of references. *The Psychoanalytic Quarterly* is an attractive publication in content and make-up, and should receive a welcome in this rich field of literature.

## NOTES

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—The cornerstone of the New York State Training School for Boys, at Warwick, N. Y., was laid on May 19, 1932. Lieutenant Governor Herbert H. Lehman spoke on "Meeting the Challenge of Delinquency." This new school is expected to be a leader in the care of delinquent boys.

—The Fourth International Post-Graduate Medical Course of the Tomarkin Foundation will be held at the Royal University, Milan, from September 12 to October 2, 1932. The subjects dealt with will include neurosyphilis, multiplesclerosis, and the endocrine organs.

—A new Veterans' Administration Hospital for the treatment of patients with mental disease will be established at Canandaigua, N. Y. The hospital is planned to accommodate 468 patients. Dr. M. C. Baines, who was formerly at Hospital No. 81 in the Bronx, has been appointed medical officer in charge of the new institution.

—The Tenth International Congress of Psychology will be held in Copenhagen, Denmark, August 22-27, 1932. Following the Congress excursions will be made to psychological laboratories in Germany and Austria. Detailed information can be obtained from Edgar Rubin, 6 Studiestraede, Copenhagen, Denmark.

—The Société Française de Phoniatrie was founded in Paris in May, 1932, with a view to the scientific study of questions relating to the physiology and pathology of the voice and speech. The officers of the society are: President, Professor Moure; vice-presidents, Dr. Hautant, and Professor Lemaitre; secretary-general, Dr. Tarneaud.

—Since 1921 the rate of first admissions with epileptic psychoses to the New York civil State hospitals has shown a downward trend, indicating a probable decrease in the prevalence of convulsive disorders. The annual death rate from epilepsy also shows a declining trend, according to the experience of the Metropolitan Life Insurance Company. The rate per 100,000 among white males decreased from an average of 4.5 per 100,000 in 1911-1920, to 2.8 in 1922-1931; among white females, from 2.7 to 1.8; and among colored males and females, from 5.7 and 3.5 to 4.1 and 1.9 respectively.

—Syphilis, because of its many ramifications, is of great interest to students of public health and mental hygiene. The Metropolitan Life Insurance Company presents evidence in its Statistical Bulletin for March, 1932, that the death rate from syphilis, locomotor ataxia and general paralysis

of the insane, has decreased among the white population in the United States Registration area during the years 1917 to 1930. Among the colored population, on the other hand, the death rate from the same group of diseases has shown a rising trend since 1920.

—Dr. Gordon Fay Willey, superintendent of the Bedford State Reformatory for Women, died May 23, 1932, at the age of 47, of self-inflicted gun wounds. Dr. Willey graduated from the Medical School of the University of Michigan in 1911. He entered the Medical Corps of the U. S. Army as a first lieutenant in 1917, and was retired for disability in line of duty in 1922. He was formerly superintendent of the Institution for Mentally Defective Women at Albion. Dr. Willey was a member of the Medical Society of the State of Pennsylvania, and of the American Psychiatric Association.

—The second International Conference of Social Work will be held July 10-14, 1932, in Frankfurt-am-Main, Germany. The congress will consist of six sections dealing with (1) health protection and medical care of the family; (2) social work and the family—social, economic, moral and spiritual factors in family social work; (3) the incomplete and the broken family as a sociological, educational and social work problem; (4) the economic protection of the family through social insurance, public and private relief, and wages policy; (5) social work for alien families and unattached children; (6) the significance to the family of cultural efforts of young people and of adult education.

—The Department of Mental Hygiene held a conference on child guidance and mental hygiene at the Kings Park State Hospital on June 17, 1932. The conference was devoted to discussion of questions relating to child welfare delinquent conduct and other mental hygiene cases confronting nurses, social workers, special class teachers and other welfare workers. Dr. James L. Tower discussed "Community Problems of Mental Defectives" Dr. A. C. Matthews spoke on "Community Hygiene Problems Found Among Adults." Hester B. Crutcher discussed "Explaining Child Guidance Problems to Parents," and Dr. Sanger Brown, II, described "Some Mental Hygiene Facilities Which the Community Should Develop."

—Miss Martha Van Rennselaer, professor of home economics and director of the Home Economics College of Cornell University since 1911, died in New York City on May 26, 1932. Miss Van Rennselaer had earned nationwide fame for her pioneer work in the development of extension programs for farm women, writing numerous bulletins and books on the home. Miss Van Rennselaer was equally active in health conservation, a health program



for organized women's activities being prepared at her request in cooperation with the State Department of Health. During the war she was on the executive staff of the U. S. Food Administration and served in Belgium in nutrition and health work. She also served as assistant director of the President's Planning Committee of the White House Conference.

—McGill University in Montreal has received a grant of \$1,232,652 from the Rockefeller Foundation for the establishment of a neurologic institute, and the development of a neurologic center. The grant will provide for a new building to be used for research in neurology, neurosurgery, and the physiology and pathology of the nervous system. Dr. Wilder G. Penfield, professor and head of the department of neurology at McGill, will direct the institute. The institute will be connected by a tunnel with the Royal Victoria Hospital. Tentative arrangements provide for the erection of a seven-story building to contain wards for public, semi-private and private rooms, operating rooms, research laboratories, offices, and a few rooms for resident graduate students.

—Various phases of mental hygiene were discussed at the annual meeting of the National Conference of Social Work at Philadelphia, May 15 to 21, 1932. One session had for its theme "Mental Hygiene and Hard Times"; another, "Parole of Patients from Mental Hospitals", and another "Programs for Research in the Public Welfare Field." Several groups considered the question: "What Happens to the Mental Health of Individuals During Hard Times."

Many valuable ideas were presented at this great conference but the audiences frequently seemed listless and tired. By means of a multitude of breakfasts, luncheons, dinners, committee meetings, round-tables and regular sessions, the delegates were surfeited. We would suggest that next year the conference practice as well as talk mental hygiene.

—Dr. Theodore I. Townsend, of Binghamton, who was formerly first assistant physician at the Binghamton State Hospital, died suddenly Tuesday, June 21, 1932, following an operation.

Dr. Townsend was born November 20, 1869, at Clifton, S. I., N. Y. His medical training was received in the College of Physicians and Surgeons of Columbia University. He served at various times on the staffs of Manhattan, Long Island, Utica, Dannemora, Binghamton and Willard State Hospitals. He retired from the last named hospital on pension about five years ago and took up private practice in the city of Binghamton.

Dr. Townsend was a captain in the Medical Corps of the Army during the World War. He was a member of Binghamton Post 80 of the American

Legion and of several professional organizations including the American Psychiatric Association and the Association of Military Surgeons.

—Dr. William Williams Keen, one of the most distinguished of American physicians, died on June 7, 1932, at the age of 95, thus closing almost a century of remarkable activity in medicine and surgery. Graduated from Brown University in 1859, he received his M. D. degree from Jefferson Medical College, Philadelphia in 1862. Even before graduation he saw service in the Civil War, acting as assistant surgeon of the Fifth Massachusetts Regiment in 1861. He conducted the Philadelphia School of Anatomy from 1875 to 1876, serving at the same time as lecturer on pathologic anatomy at the Jefferson Medical College. From 1876 to 1889 he was professor of artistic anatomy in the Pennsylvania Academy of Fine Arts, and from 1884 to 1889 professor of surgery in the Women's Medical College. He then became professor of surgery in the Jefferson Medical College remaining until 1907 when he became professor emeritus. He was honored by many universities and nations. He was president of the American Surgical Association in 1899, vice-president of the American Medical Association in 1899, and president in 1900. He was a fertile author, writing primarily on surgical subjects, his magnum opus being the "System of Surgery" in eight volumes. He was very vigorous in combating the views of anti-vivisectionists with respect to animal experimentation.

—The growth of State hospital clinics dealing with non-institutional cases has attracted attention to community problems of mental hygiene. State hospital psychiatrists have not always had a complete understanding of the community resources essential to the consideration of such extra-mural cases. To meet this need the Committee on Mental Hygiene of the State Charities Aid Association recently formulated a training course to meet the special requirements of such a group of psychiatrists. This course which was carried out in the months of April and May, 1932, covered eight weeks of intensive study. Dr. Frederick W. Parsons, Commissioner of Mental Hygiene, endorsed the plan and made it possible for the superintendents of the various State hospitals to designate a psychiatrist in charge of extra-mural work to come to New York City for the training period. The program provided for observation of modern psychiatric out-patient clinic procedures, including child guidance clinics; contacts with child-placing social agencies; study of public health nursing, mental hygiene aspects of public school work, juvenile court, and the psychiatric clinic in the court of General Sessions, vocational guidance and the treatment of parole patients. Those taking the course were given practice in the art of public speaking. Agencies and organizations in and about New York City cooperated liberally in this program of study.

—The suicide record for 1931 has been compiled for the Spectator Company by Dr. Frederick L. Hoffman and was published in June, 1932. The data confirm the general impression that the suicide rate has increased during the depression period. Figures for 100 cities with a combined population of 32,797,490 show a total of 6,725 suicides during the year, a rate of 20.5 per 100,000 population. This rate has been exceeded only three times in the last three decades: In 1908, the rate was 21.5; in 1914, 20.9 and in 1915, 20.8. Cities having the highest rates in 1931 included Cedar Rapids, Iowa, 41.8; San Diego, California, 44.0; Sacramento, California 44.3; and Madison, Wisconsin, 44.8. In 10 cities a marked decrease in deaths from suicide occurred in 1931 as compared with 1930. In Manhattan and Bronx the death rate from suicide in 1931 was 28.3. In Greater New York including all boroughs the rate was 20.1.

Comparative rates of suicide in foreign cities in recent years were included in the report. These rates vary from 0.8 in Bareilly, India, to 58.0 in Vienna. The accuracy of the low rates shown for many foreign cities is questionable.

Dr. Hoffman estimates that in the United States the total annual deaths from suicide are about 20,000, and he suggests that organized effort for the prevention of suicide be made. He believes that if nothing is done to check the upward trend our suicide rate may reach the high level found in the continental cities of Europe.

## EXPERIMENTAL TOXIC APPROACH TO MENTAL DISEASES

*(The reaction of the brain tissue to subcutaneous injection of enterogenous toxic substances—indol and histamin)*

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### OUTLINE

#### Part I:

1. Introduction
2. Indol
  - A. Origin and chemical properties
  - B. Amount of indol in the intestines
  - C. Toxic properties
  - D. Absorption and detoxication
3. Histamin
  - A. Chemical properties
  - B. Origin of histamin and its normal amount in the intestines
  - C. Presence of histamin in various organs
  - D. Absorption of histamin
  - E. Physiological and pathological action
  - F. Detoxication

#### Part II:

4. Experimental work
  - A. Experimental indol poisoning
  - B. Experimental histamin poisoning
  - C. Experimental poisoning with indol and histamin combined
  - D. Experimental poisoning with potassium cyanide alone or in association with indol

#### V. Comments

## PART I

### 1. *Introduction*

For a number of years the advocates of the toxic origin of mental diseases have insisted on the occurrence of nutritive and digestive disturbances preceding or accompanying mental symptoms. Indigestion and dyspepsia in every form, anorhexia, falling off in weight, and muscular flabbiness have commonly been found especially preceding attacks of melancholia.

According to A. Pick<sup>1</sup> (1896) autointoxication produces marked nervous phenomena which may be classified as: (1) giddiness—sometimes a true vertigo, (2) headache, (3) heaviness and sense of pressure on the head, (4) cerebral vomiting, (5) convulsions, (6) psychic disturbances. He states also that insanity is often associated with constipation and is relieved when this is cured.

M. Allan Starr<sup>2</sup> (1901) is quoted by Coriat<sup>3</sup> in regard to the toxic origin of neurasthenia and melancholia as making a statement concerning the occasional occurrence of large quantities of indican or indoxyl in the urine in cases with a sensation of pain and fullness in the head and various motor disturbances. Coriat also quotes Wagner Von Jauregg<sup>4</sup> as reporting that in psychoses due to gastrointestinal autointoxication in addition to acetone a considerable amount of indican is found. Also along the same line in his article on psychoses due to autointoxication Regis<sup>5</sup> points out the occurrence of more or less considerable quantities of indican, acetone, diacetic acid, tyrosin and the conjugate sulphates in the urines of psychotic patients.

According to Clauston<sup>6</sup> (1904) constipation and altered bowel content, in the direction pointing to imperfect digestion, primary and secondary, are present in more than 50 per cent of the cases as prodromata of various forms of mental diseases. A. D. Townsend<sup>7</sup> (1905) in his article on mental depression and melancholia also expressed the view that from his own observations a large portion of cases suffering from melancholia are due to autointoxication resulting from the absorption of toxins from the alimentary tract. The symptoms pointing to a disturbed metabolic process

in some parts of the gastrointestinal tract are, according to the author, foul breath, coated tongue, indifference to and often refusal to take food, marked constipation, fouled stools, anemia, a sallow dirty skin, profuse perspiration and offensive odor, skin irritations, disorders of sensation often leading to flesh picking and headaches.

Prujnier<sup>8</sup> also concluded from his study of autointoxication in mental confusion that from his own experience and from a review of the literature there exists in most patients suffering from a functional mental disorder some gastrointestinal intoxication. Owing to an excessive production and absorption the kidneys are stimulated for further work so that there appears a hypertoxicity of the urine, but this hypertoxicity of defense is not equal to the amount of the toxin originating from the gastrointestinal canal so that autointoxication of the body is produced and manifests itself by various physical signs and by the appearance of mental confusion. After experimental injection of the hypertoxic urines all the injected animals died in convulsions or opisthotonus with trismus, never in coma, a symptomatology which the author attributes to the presence of ptomaine in the injected urine.

The presence in the urine of an excess of indoxyl means for Lewis Bruce<sup>9</sup> (1906) a loaded alimentary tract which should at once be treated with the use of large enemas and a farinaceous milk diet.

Among the 24 items in favor of a toxic origin of dementia præcox, Bayard Holmes<sup>10</sup> (1913) quotes that the urines of dementia præcox patients tend to contain a larger portion of the products of catabolized toxic amines, especially histamin, than the normal control.

The same author (1920) in dealing with the character of the toxic substances responsible for the cerebral lesions in dementia præcox states that one of the most conspicuous factors relative to the symptom complex of dementia præcox is a parallelism of the symptom complex of an animal or man poisoned with histamin or with ergot and for this reason he hypotheccates the production of histamin or other aminazol containing molecules in the cecum during the long delay of the remnants of the meal in that viscus. He



contends that the toxic amines are produced by the catabolism of amino acids by bacterial growth.

In the same year, 1920, F. W. Menzis<sup>11</sup> pointed out that in depression occurring at the involutionary period a most important factor is excessive putrefaction in the intestines and that asylum cases showed at autopsy a jejunum and ileum shrunken in diameter and length.

In the past ten years Buscaino<sup>12</sup> in Italy has also been advocating intensively the study of dementia præcox from the toxic angle. He also believes dementia præcox to be the result of an intoxication due to the presence of abnormal amines and mainly of histamin circulating in the blood. Buscaino<sup>13</sup> has even devised what is known as the black reaction which consists in the formation of a black precipitate whenever a certain amount of urine is added to half the amount of a five per cent solution of silver nitrate and heated to boiling point. According to Buscaino the reaction is due to the presence in the urine of organic bases and mainly amines. The reaction has been found negative in 23 normal subjects, whereas, it has been positive in 30 per cent of 91 cases of dementia præcox.

Another aromatic product of putrefactive decomposition, in the sense of cleaving of proteids and allied substances, which has been considered as a toxic substance originating in the gastrointestinal tract, is indol. It has long been known that indol is a product of putrefactive decomposition of proteids and Baumann<sup>14</sup> showed many years ago that this substance is formed in the large intestines in the course of putrefactive processes occurring there. He showed, moreover, that the absorption of indol from the intestine is followed by the appearance of indican in the urine.

A few observers have concluded that the indican of the urine may in part depend upon the liberation of indol from the breaking down of body cells. Herter<sup>15</sup> regards the evidence in favor of this view as unsatisfactory and believes that the indican of the urine depends exclusively on the resorption of indol from the intestinal tract excepting in those cases in which pathological processes, such as putrid abscess, are associated with the formation of the base.

The observation has been repeatedly made by clinicians that

persons in which a very strong indican reaction can be obtained in the urine during a long period of time invariably suffer from nervous or dyspeptic disorders and many careful physicians have believed that there is some causal connection between the absorption of indol from the intestines and the development of functional, nervous, or nutritional derangements. In his book on "Bacterial Infections of the Digestive Tract," Herter (1907) expressed the opinion that the grounds for such a belief had been considerably strengthened. He adds, "nevertheless it can hardly be said that the relation between the absorption of indol and the symptoms of intoxication in man has ever been placed upon a firm scientific basis. I believe that I have myself underestimated the importance of indol as a toxic agent in man and desire to present here evidence which has lately come to light in regard to the influence of indol on the animal organisms."

From the experimental point of view we can recall here Rovighi's<sup>16</sup> experiment, substantiated by those of Herter, as to the markedly toxic effect over the nervous system of intravenous injection of indol both in rabbits and in dogs. Herter experimented also on humans and found that the ingestion of two grams of indol produced restlessness and over-active brain, insomnia, and headaches. Some subjects showed headache and slight dizziness and sometimes sense of fatigue. The same author stated also that the long continued absorption of enough indol to cause a strong reaction of indican in the urine is sufficient to cause neurasthenic symptoms.

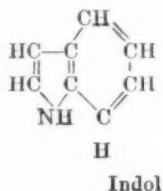
In our own personal clinical experience we have often found concomitance of mental symptoms and gastrointestinal disturbances, and the concomitant relief of such mental symptoms with the removal of the impaired gastrointestinal function.

All the above-mentioned considerations have led us to the experimental investigation of the reaction of the brain tissue to experimental injections of two of the most important toxic products found in the gastrointestinal tract: indol and histamin. The fact that these products are always formed in the gastrointestinal tract and may occasionally be extracted in amounts sufficient to produce clinical symptoms makes our pathological investigation more inter-

esting because it tries to correlate symptoms of a mental order with intoxication from products physiologically formed inside the body and the elimination of which depends on the efficient activity of various internal organs.

## 2. Indol

A. *Origin and chemical properties:* Indol is a derivative of the aromatic series and a member of the indigo group of compounds. Its empirical formula is  $C_8H_7N$ .



Its relation to the aromatic series is best seen by considering its probable constitutional structure, which is represented by a union of pyrrol and benzene in such a manner that pyrrol and benzene have two carbon atoms in common, as for instance, in naphthalene.

Indol crystallizes in glancing white crystals, has a melting point of  $52^{\circ} C$ , and volatilizes readily with steam. It has a characteristic fecal odor and is partly responsible for the odor of normal human feces. Herter has noticed that the odor is less intense when the indol is thoroughly freed from an unknown oily substance with which it is apt to be associated when derived from putrefying fibrin. Indol is a weak base. It is soluble in water. A solution containing indol, when treated with sulphuric acid and sodium nitrate, undergoes a change in color due to the formation of nitroso-indol. The reaction is an exceedingly delicate one for it is recognizable in a solution of one part of indol in two hundred thousands of water. The well-known cholera red reaction depends on the formation of nitroso-indol.

Indol, according to Herter, is not the product of the tryptic digestion of proteids because the proteid food entering the intes-

tine though attacked vigorously by the abundant tryptic ferments of the pancreatic juice does not reach a state of decomposition advanced enough to lead to indol production. While it is true that indol is a product of proteid cleavage, Herter thinks it is extremely doubtful whether there is an opportunity for the process of cleavage to go so far as to give indol unless the quantity of proteid food is largely excessive and thus absorption delayed. Ordinarily absorption occurs in the peptone and amino acid stage of proteolytic digestion.

It is not conceivable for Herter that in the absence of putrefactive bacteria from the small intestine a rapidly proteolized meal should lead to the formation of indol in the intestine and, as a matter of fact, according to the same author the presence of indol in the intestine is dependent on the action of living bacteria on proteid material. The indol produced in the intestine is dependent on the production of a more complex substance known as tryptophane, which substance arises at an early period in the putrefaction of proteids. It has been observed that while the tryptophane colored reaction is almost always observed in the early stage of putrefaction, it later disappears because of the further cleaving action of bacteria on an organized ferment. Hopkins<sup>17</sup> was able to show that the action of bacteria upon tryptophane may lead to the formation of indol, scatol, indol acetic acid, and indol propionic acid.

An endeavor was made to determine the influence of individual types of bacteria upon the cleaving of tryptophane and it was found that *b. coli* is capable of giving rise to considerable yields of indol, at the same time producing indol acetic acid. Herter found that the injection of pure cultures of colon bacilli into the jejunum of dogs was followed by an increase in the indican reaction of the urine and an increase in the output of the ethereal sulphates. The cultures of *proteus vulgaris* were negative in this respect, while lactic acid bacilli showed a tendency to cause a reduction in the excretion of indican and of the ethereal sulphates. Herter feels that indol is formed in the small intestines through the action of colon bacilli on peptons and in the ileum and large intestines through the combined action of putrefactive anaerobes and colon

bacilli on such proteids as may have escaped digestion at higher levels.

The formation of indol through bacterial activity is distinctly influenced by a variety of conditions. It was found by Hoppe Seyler<sup>18</sup> that when an abundance of oxygen came into contact with putrefying proteid material which would ordinarily yield indol, and the carbon dioxide and ammonium carbonate resulting from the putrefactive process were rapidly and entirely removed, indol, scatol, mercaptan, etc., were not formed at all. Salkowski and Blumenthal<sup>19</sup> found that a slight grade of alkalinity was more favorable to the formation of indol than a somewhat stronger degree of alkalinity. On the other hand, Smith<sup>20</sup> has shown that the presence of sugar retards the indol production of the colon bacillus because micro-organisms act on the sugar rather than on the proteids until the former is consumed. According to L. Segal<sup>21</sup>, however, the indican excretion does not seem more affected by high carbohydrate diet than by one comparatively low in carbohydrate. Herter found that the addition of the common yeast plant to fibrin putrefying under the influence of the colon bacillus may cause a marked diminution in the usual yield of indol and P. Brieger<sup>22</sup> reported that the entire absence of air greatly slowed but did not wholly prevent the production of indol.

B. *Amount of indol in the intestines:* There are many persons from whose intestines it is impossible to recover indol at all or even a mere trace. This is particularly the case with children and young adults (Herter). There are, however, other persons who, although suffering from disorders of digestion, do not have indol in the digestive tract. On the other hand, the production of considerable quantities of indol in the large intestine is a feature of many instances of intestinal putrefaction and in some cases the quantity formed is large.

According to the above-mentioned author one may find as much as 50 to 60 mg. of indol by the naphtha quinine method in 100 grams of the fresh stool. This probably approaches the maximum amount present at any one time. It is of course clear that such indol production is distinctly pathological in occurrence. Its production in smaller amounts permitting the recovery of 5 mg. in 100



grams of moist feces is no uncommon occurrence and such indol production may or may not be associated with the development of intestinal or nervous or other disturbances.

From his own studies of the normal content of excretion of indol in the urine J. Harvey Borden<sup>23</sup> reaches the conclusion that it is compatible with health for a person to excrete daily in the urine over a considerable period anywhere from 5 to 10 mg. of indoxyl while an occasional excretion of 15 to 20 mg. may occur without causing any notable symptoms. Segal, in her investigation of 48 psychotic patients, found in the urine a maximum excretion of 15 to 20 mg., but the common average was placed by her between 0 and 10 mg. J. Daland (1909)<sup>24</sup> feels that indoxyl potassium sulphate (indican) is excreted normally in quantities of 5 to 10 mg. and abnormally in quantities of 50 to 150 mg. per day.

C. *Toxic properties of indol:* It has been found that small amounts of indol can be administered for a long time in animals without disclosing appreciable clinical symptoms. The first observation relating to the subject is, according to Herter, the one of Nencki<sup>25</sup> who in 1876 observed that a dog to which one gram of indol had been fed showed no indication of intoxication but developed active diarrhea and hematuria when it received two grams within 24 hours. Christiani,<sup>26</sup> two years later (1878), found that indol, like phenol, was readily absorbed by frogs through the medium of the skin and gave rise to increased reflex irritability followed by light transient paralysis when the animals were placed in a solution containing 10 mg. of indol in 100 cubic cm. of water. These symptoms resemble in every respect symptoms observed to follow the absorption of phenol. When a frog was placed in 20 cubic cm. of one per cent solution of indol several paralytic symptoms appeared after 35 or 40 minutes. Even in this condition slight external stimuli gave rise to tremor. Death occurred invariably at the end of 24 hours.

In 1896 Rovighi published some experiments in relation to the toxic effects of indol, scatol, and phenol. He found that indol and scatol produce essentially the same derangement in rabbits, namely, torpor, somnolence, widespread paresis, feeble heart action, reduction in temperature, and retention of urine and feces. The fatal



dose of indol and scatol for rabbits was found to be 1.5 to 2 grams when given subcutaneously in the course of 48 hours. Rovighi found that animals became more sensitive to the poison after the first dose. Congestion of the liver was found to succeed acute indol poisoning. In chronic poisoning areas of small round cell infiltration were observed surrounding the bile ducts. The kidneys were the seat of congestion only.

In 1898 Herter<sup>27</sup> investigated the action of acute and chronic poisoning in rabbits by using indol obtained from the putrefaction of large quantities of pigs' fibrin. Two thousand grams of fibrin after exposure to the air for eight days yielded 2.7 grams of indol. Herter found that the addition of cultures of the common colon bacillus from the feces of a normal individual resulted in a larger yield, namely, 4.2 grams of indol, the quantity of fibrin, the duration of the process, and the temperature being the same. The conclusions of his experimental work were that intravenous injections of indol exert marked toxic effects upon the nervous system in rabbits, dogs and monkeys. Both in rabbits and in dogs the characteristic symptoms were cardiac and respiratory depression, general prostration, marked contraction of the pupils, irregular clonic spasm, and increased reflex excitability, including increase in the activity of the knee jerks. In the subacute cases prostration and diminished activity of the animals were prominent symptoms. The chief alteration from a pathological standpoint was found in the liver cells which were the seat of degeneration and pigmentation. The administration of five cubic cm. of 0.1 per cent solution of indol daily for two months into a small ringtailed monkey was followed by apparently no appreciable clinical results.

Herter proceeded also in experimenting on human beings and he reports interesting results following various quantities of indol taken by three healthy individuals. The first observation relates to a man 32 years old, weighing 150 pounds, and in exceptionally robust health. The following table gives the main data pertaining to the symptoms following the ingestion of indol.

The second observation relates to a vigorous medical student, 25 years of age, weighing about 160 pounds.

## OBSERVATION No. 1

Date	Quantity of indol taken	Symptoms	Indoxyl reaction
Dec. 28	0.1 gram at middle of day	Toward evening "dull feeling" in front of head; feels slightly giddy. Sensation at times as of slight headache, but can hardly call the feeling a pain.	Faint
Dec. 29	0.3 gram indol during day in doses of 0.1 gram	Slight frontal headache most of day; some sensation of "lightness" in head at times. No other symptoms.	Increased
Dec. 30	0.5 gram indol	At 2 a. m. was awakened by very severe colic. Then had large watery movement followed by relief of colic. During the day felt entirely well. No perceptible effect from indol, except that toward evening there was some unsteadiness in the legs and stiffness in the muscles on walking upstairs.	
Dec. 31	No indol	Felt perfectly well during morning. Knee-jerks seem increased as compared with Dec. 27. Pupils normal; no contraction.	
Jan. 1	0.4 gram indol, in the morning	Sensation of "lightness" in head; no headache. Otherwise entirely well.	

## OBSERVATION No. 2

Date	Quantity of indol taken	Symptoms
Jan. 30	1 gram in divided doses	No symptoms whatever.
Jan. 31	1.2 grams in divided doses	Intestinal flatulence during morning. No other symptoms until evening. Then incapacity for mental work; cannot memorize. No symptoms during the day.
Feb. 1	2 grams in divided doses	Slept only a short time during the night. Restless and very active mentally. Such sleep as was obtained was interrupted by vivid dreams.
Feb. 2	0.6 gram in divided doses	Headache on rising. Soon passed away. No other symptoms.
Feb. 3	1 gram in divided doses	Sleep much disturbed by dreams.
Feb. 4	1 gram in divided doses	Insomnia.

The third observation relates to a medical student 26 years of age, in good health, but not specially robust, and weighing at the time 130 pounds.

## OBSERVATION No. 3

<i>First Trial</i>			
Date	Quantity of indol taken	Symptoms	Indoxyl reaction
Dec. 2	0.025 gram after lunch	No symptoms.	Negative
Dec. 3	0.050 gram after lunch	Little effect. A little unsteady in legs. Bad taste in mouth on rising. A little nervous toward evening. "Slight fullness" in forehead during afternoon. No symptoms after dinner.	Strong
Dec. 4	0.2 gram during day	Dreams more distinct than usual. No unsteadiness on feet. No perceptible derangement. Dull sensation in head, perhaps from dissecting longer than usual. Knee-jerks seem increased.	Strong
Dec. 5	0.2 gram during day	Dull sensation in head lasting all day. Slight dizziness during evening. Knee-jerks increased as compared with previous days.	Very strong
Dec. 6	Indol stopped	Head feels well.	Slight
<i>Second Trial</i>			
Dec. 10	0.2 gram during day	Feeling well. A little "fullness" in forehead and slight nausea.	Negative
Dec. 11	0.1 gram at breakfast; 0.2 gram at lunch; 0.2 gram at dinner	Headache continued through the night. Relief after rising but "heavy feeling" continues. During afternoon felt very tired. Dull frontal headache returned. Headache continued during evening. Slight cramplike pains in legs during walking.	Very strong
Dec. 12	Indol stopped	Headache continues. Bad taste in mouth. By 5 p. m. feeling as well as ever.	Very strong
Dec. 13	No indol	No symptoms.	Negative

*Third Trial*

Date	Quantity of indol taken	Symptoms	Indoxyl reaction
Dec. 14	0.1 gram at 7:45 p. m.	Feeling well during day.	Negative
Dec. 15	0.3 gram during day; 0.1 gram at each meal	As usual during morning. After dinner, during afternoon felt tired. Slight pain and stiffness in shoulders lasting only a short time. During evening, dull feeling in head, hardly headache.	Medium
Dec. 16	0.2 gram during day	Bad taste in mouth. Sleep much disturbed by dreams. Feels "tired all over." This lasted through afternoon. A little stiffness in shoulders after sitting. Slight pain in front of thighs.	Very strong
Dec. 17	0.2 gram during day	Bad taste in mouth. Disturbed sleep. A little weakness in legs. Dull feeling in head. After breakfast felt tired all over. Could not study. Dull feeling in head continued; no ache. During afternoon felt tired; weak in knees. Slight pains in head lasting a few seconds. At night, severe frontal headache, coming on gradually since dinner. Can eat, but is not hungry.	Strong
Dec. 18	0.2 gram during day	Sleep disturbed. Bad taste in mouth. Headache lasted through night. Improvement on rising, but head still dull. Tired all day. Dull sensation in head	Strong
Dec. 19	0.2 gram during day	Sleep less disturbed than previously. (Walked a little longer than usual on previous evening). "Dull, tired feeling" continues.	Strong
Dec. 20	0.2 gram during day	Slept well. Head feels tired and dull. Unpleasant frontal sensation all day.	Strong

The general effect reported in the first observation is the occurrence of slight frontal headache and a sensation of light-headedness or giddiness. An interesting feature was the occurrence of colic followed by diarrhea.

The main features of the third observation resemble those of the first. The symptoms were, however, a little more pronounced although the quantity of indol was smaller. During the first trial frontal headache or a sensation of fullness in the forehead was present the greater part of the time. A sensation of dizziness was also noted at one time. Toward the end of the observation the knee jerks seemed increased as compared with previous days. As soon as the indol was stopped the symptoms wore away and there was no recurrence of similar disturbances until after the beginning of the second trial, five days after the completion of the first. Then after the administration of rather large quantities of indol the original symptoms, especially frontal headache, returned. The headache and prostration were in fact so marked that it was considered best to discontinue the experiment. As in the first trial the discontinuance of the indol was quickly followed by an entire subsidence of symptoms. The aim of the third trial was to give quantities of indol which, while occasioning definite symptoms, would not cause such pronounced derangements as to make the continuance of the experiment over a long period of time impossible. The period covered by this trial was eight days. Although marked headache was present only once during the period, a sensation of discomfort in the frontal region was an almost continuous feature of the experiment. The characteristic feature of the trial, however, was a decided sense of fatigue. The subject of the experiment summed up his experience by saying that the first and second trials gave him headache, while the third trial gave rise to lassitude and inability to work.

Herter adds that the susceptibility to indol is a highly individual thing. Two elements enter into this susceptibility: one, the character of the nervous system, and second, the ability of the organism to transform indol into less toxic substances. He suggests that it would be most instructive to select subjects for experiment with reference to these two elements. On the one hand persons with

irritable nervous systems should be compared with persons who react slowly and moderately to external stimuli. On the other hand, normal subjects should be contrasted with patients suffering from extensive damage to the parenchyma of the liver as in sclerosis and in fatty or amyloid liver. In his conclusions the author believes that prolonged and excessive indol absorption is capable of causing headache, especially frontal headache, abnormal cephalic sensations, and indisposition for mental and physical exertion. The latter condition, if prolonged, may perhaps form the basis of a neurasthenic state.

A certain number of investigators, among which we can quote L. Segal and J. Harvey Borden, feel, however, that there is no constant relation, causative or other, between the excretion of indican and any particular form of mental disease. I. H. Coriat, though admitting the existence of increase of indican elimination in the various psychoses, feels inclined to correlate such an increased output with the akinetic or hyperkinetic state accompanying the psychoses and independent of the form of mental disease. He feels that the problem at present must remain unsolved until we learn more of the physiological and pathological chemistry of the various psychoses.

F. S. Lee<sup>28</sup> undertook experiments to determine the influence of indol on the onset of muscular fatigue. He irrigated two different corresponding muscles for a given length of time with a physiological salt solution and with an .05 solution of indol respectively and found that the muscles perfused with indol lose part of their working power. The rate of normal work to indolized work in cat muscles is 100 to 55. This finding seems important as it gives an experimental basis for the belief that indol is capable of acting as a depressant on the muscular mechanism. This experimental fact has its significance for the human subject because indol is the only aromatic product which is known to be absorbed in quantities sufficient to render probable a toxic influence upon the neuromuscular system.

E. Metchnikoff and E. Wollman (1910)<sup>29</sup> and S. Dratschinski (1912)<sup>30</sup>, through administration of paracresols and indol produced in rats, rabbits, and monkeys vascular lesions in the sense of athe-



romatous changes besides interstitial inflammatory changes in the kidney and liver. Wessely<sup>31</sup> by introducing a two per thousand solution of indol in the corpus vitreus of rabbits' eyes, was able to reproduce swelling of the optic nerve.

Woolley and Newburgh (1911)<sup>32</sup> report that following injection of indol they were able to find hypertrophy and hyperplasia of the medulla of the adrenal and that the evidence of chromafine activity increased in proportion to the number of injections.

Phocas (1927)<sup>33</sup> was able to reproduce through prolonged administration of indol a chronic nephritis with hypertension and cardiac hypertrophy.

Biebl (1930)<sup>34</sup> published his results on the pathological changes occurring in the subacute, chronic, and latent intoxication through phenol-indol substances in animal experiments. The author reports that in subacute indol intoxication severe hemorrhagic changes are found in the kidneys, and death presumably occurs under uremic conditions. The considerable loss of blood leads to a secondary anemia. The kidney appears in section a dark brown, dark blue color. The reticulo-endothelial system of the liver discloses a light beginning hypertrophy. In the so-called chronic phenol-indol intoxication following administration of the substance in dogs for several weeks the author found considerable hyperemia including the glomeruli, the cells of which appear swollen in a half-moon shape. No exudate is present, however, in the Baumann's capsule.

In phenol-indol intoxication, which the author obtained through the feeding of 100 to 400 mg. every other day for several months, the main clinical changes that the author found was a considerable increase in the blood pressure up to 210 mgs. of mercury. The author feels that this increase in blood pressure is a so-called functional one and not due to chronic nephritis. The author compares this functional hypertonia to the essential hypertonia in man, thus opening the question as to the correlation of indol intoxication with genuine hypertonia. In the urine in only one experiment was the author able to find a few casts, all the remaining animals showing a normal urine as far as the albumin and cellular content were concerned. It appears that only a slight hyperemia of the glomeruli was found but no signs of clinical

nephritis or appreciable arteriosclerosis. In a few cases of indol and cresol intoxication the cells of the liver are considerably pale. In the cresol intoxicated dog there was a tendency to degeneration of the blood vessel walls. The suprarenals were possibly enlarged in contrast with the heart which was always found definitely hypertrophic but not dilated.

From the experimental standpoint very little is known as to the pathological reaction of the central or peripheral nervous system to acute or chronic indol poisoning. The only passing mention is the one of Herter who in acute indol poisoning reports that the brain is soft and congested and that the cortical nerve cells are edematous and show excessive chromatolysis.

D. *Absorption and detoxication of indol:* The effects of the indol produced during putrefaction in the intestine depends upon its absorption in the organism through the intestinal wall. In conditions of health the absorption of moderate quantities of indol from the intestine is followed by the rapid oxidation of indol to indoxyl or some indoxyl compound and this oxidation is associated with or followed by a synthesis of sulphuric acid occurring mainly in the liver and partly in the muscles and which results in the production of indoxyl potassium sulphate or indican of the urine. It is the indoxyl potassium sulphate of the urine which on further oxidation yields indigo. A close relationship between the quantity of indican in the urine and indol formation in the intestine is not always demonstrable. The feces may contain little indol while the urine yields much indican. Conversely, the feces may contain a considerable quantity of indol and owing to imperfect absorption the urine may contain only a moderate quantity of indican. Upon the whole, however, if one considers the findings from day to day over a considerable period of time, it holds true that there is a rough relation between the indol formed in the intestine and the quantity of indican excreted. The indoxyl radical present in the urine, has, however, to be oxidized into indigo blue or indican, by means of calcium hypochloride as proposed by Jaffe, or by means of ferric chloride in hydrochloric acid as proposed by Obermeyer. This appearance of indigo blue on oxidation is the reaction em-

ployed in the routine examination of urine, the so-called indican test or indoxyl test.

Herter and Wakeman<sup>35</sup> have shown that the living cells of the body, especially the hepatic and renal cells and epithelial cells of the intestinal tract, have the power of absorbing considerable quantities of indol as well as of phenol and tying them usually in such a way that these bodies cannot be recovered by distillation. Owing to this property of the cells by which they hold these aromatic bodies while subjecting them to oxidation and pairing, the nervous system is screened from their action. The importance of this screening action is considerable, for the presence of indol or phenol in very slight concentration in the blood of the carotid artery suffices to induce violent nervous excitation followed by a depression of nervous function. According to Herter, in animals which do not possess livers capable of promptly removing the greater part of the indol the nervous system falls a prey to the action of the poison. Conversely, it is also true that in those animals in which nervous symptoms are very pronounced after such injection of indol it is found that the blood and brain hold considerable indol, whereas, the liver may be shown to have fallen far below its normal capacity in the removal of the poison from the blood.

For the same author it may be regarded as settled that the liver, muscles, intestinal epithelium, and other cells normally exert a protective action on the nervous system in screening it from the effects of an injurious percentage of indol in the blood by the ability of these structures to quickly bind any indol which comes to them. While inequalities of reaction in two different individuals may be due partly to differences in the rapidity of absorption, the main striking differences due to this factor have been noticed in the excretion of indican in the urine and it appears more probable that the differences in the observed toxic factors are dependent on inequalities in different persons in respect to their ability to oxidize indol and to pair it with sulphuric acid.

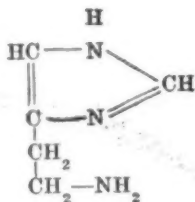
The probability that the individual differences in the oxidizing capacity of the tissues of different persons might play a part in determining the toxic factors of indol made it desirable to get experimental evidence as to the influence of the imperfect oxidiz-

ing action of the cells on the fate of indol in the body. Such experiments have been planned and made by A. N. Richards and J. Howland<sup>86</sup> and are reported in Herter's books. To reduce the oxidizing process in the cells the two above-mentioned authors injected in animals hydrocyanic acid, a substance which possesses a high degree of power to depress the ability of animal cells to take up oxygen from the blood. By injecting also subcutaneously potassium cyanide in cats, mice, guinea pigs, and dogs in doses capable in themselves of causing marked symptoms, the toxic effects of the injection of indol was enhanced, and for instance, the characteristic muscular twitching following indol intoxication appears sooner and lasts longer in animals previously subjected to the action of potassium cyanide.

Experiments were also made to determine whether after subcutaneous injection of indol any uncombined indol may be excreted by the gastrointestinal tract. No indol may be detected in the distillate obtained from an intestinal loop, whereas, an extremely intense indican reaction was present in the urine. If the animal was previously treated with potassium cyanide, the indican reaction as judged by the intensity of the color was considerably less. The quantity of indol excreted was distinctly less than during the first experiment.

### 3. *Histamin*

#### A. *Chemical properties*: Imidazolyl ethyl amine.



Its molecular weight is 111. It liquefies at 84° C. It is soluble in water and alcohol, less in chloroform and insoluble in ether. Histamin chloride is only slightly soluble in boiling chloroform. Water

solution of histamin reacts alkaline. A solution of histamin in an unsterile medium keeps only a few hours at the temperature of the room because its pharmacological power is lost through bacterial activity. Mixing of histamin with blood serum, gastric juice, and fibrin or saliva does not diminish its pharmacological power. As a salt the histamin comes as a dihydrochloride  $C_5H_9N_3 \cdot 2 HCl$  and as diphosphate  $C_5H_9N_3 \cdot 2H_3PO_4$ . The dihydrochloride has a molecular weight of 184 while the diphosphate, named also ergamine, has one of 307. Histamin has been synthetically produced by Windaus and Vogt<sup>37</sup> and later on by Pyman. Generally histamin originates through the bacterial disintegration of histidin. As found by Ackerman<sup>38</sup> the formation takes place through a process of decarbozylation. Decarbozylation through chemical procedures occurs only in very small amounts (Ewins and Pyman<sup>39</sup>).

There are no specific chemical methods to detect histamin directly. Usually the reaction of Pauly<sup>40</sup> is used but unfortunately other imidazole compounds are detectable with the same reaction. Histamin has, therefore, to be first isolated before its presence is to be purely detected. A method for the isolation of histamin has recently been described by C. H. Best, H. Dale, H. W. Dudley, and W. V. Thorpe<sup>41</sup>. Koessler and Hanke<sup>42</sup> have also devised a method (1919) for the quantitative evaluation of histamin. The chemical reaction to detect histamin being very complicated, biological reactions have been devised based on the power of histamin: (1) to contract the unstriped musculature of the uterus and intestine of guinea pigs, (2) to lower the blood pressure in atropinized cats, (3) to increase the blood pressure in etherized and atropinized rabbits, and (4) to stimulate gastric secretion.

B. *Origin of histamin and its normal amount in the intestines:*  
Histamin may originate:

- (1) From the bacterial decarbozylation of histidin.
- (2) From the fermentative decarbozylation of histidin.

(1) The bacterial origin was first mentioned by Berthelot and Bertrand<sup>43</sup> in the intestinal content of normal individuals and of individuals suffering from intestinal conditions. They refer to a bacillus of the type of pneumococcus Friedlander which they call



the "bacillus aminophilus." Mellanby and Twort<sup>44</sup> found in feces, gram negative bacilli of the coli group and O'Brien<sup>45</sup> a short time later (1915) described 30 different types of bacterial species which can produce histamin. The bacteria can in this respect be divided into four classes: (1) those which decarboxylize histidin, (2) those which decarboxylize tyrosin, (3) those which decarboxylize either histidin or tyrosin, (4) those which decarboxylize neither histidin nor histamin. In herbivores no histamin building bacteria are present.

Hawk and Bergheim<sup>46</sup> and W. Feldberg and E. Schilf<sup>47</sup> all state that decarboxylation of amino acids may be brought about by a great many bacteria especially the anerobic bacilli, the most prominent being the bacillus aminophilus intestinalis. Koessler and Hanke have shown that the formation of histamin is always coincident with the presence of a medium which is distinctly acid. They believe that histamin is produced by the bacillus communis to neutralize excess of acidity.

The same authors found the large intestine normally to contain micro-organisms that have the faculty of decarboxylating histidin to histamin and tyrosin to tyramin. The decarboxylation activity is probably far more general in its extent and future work may show that the mixture of micro-organisms contained in feces has the faculty of producing toxic amines from a large number of carboxylated amino acids. This fact would lead one to expect that the intestinal contents must normally contain toxic amines. These authors have indeed succeeded in demonstrating the presence of a fairly large amount of histamin in the cecal content and in the normal human feces. A study of the decarboxylation activity toward histidin and tyrosin of the mixture of micro-organisms contained in human feces has shown to Hanke and Koessler<sup>48</sup> that of 18 stools obtained from normal individuals 14 contained micro-organisms that decarboxylate histidin and 11 contained micro-organisms that decarboxylated tyrosin.

These authors were also able to get 6 to 20 mg. of histamin yield from 500 to 600 grams of normal human feces. Of the cecal content 2 and 7 mg. of histamin were extracted from 600 and 1200 c.c. of the content respectively.



The alimentary tracts and livers of two guinea pigs did not yield histamin, which fact was attributed by the authors to the alkaline character of the diet and its low histidin content. There is no relationship between decarbozylation activity and sugar fermentation. The decarbozylation activity is a protective mechanism and is resorted to by the micro-organisms when the accumulation of H ions within the bacterial protoplasm is incompatible with its normal life process. Histamin and tyramin therefore are produced in any medium in which a strong acid reaction is developed regardless of the composition of the medium (provided, of course, that the appropriate amino-acids and the correct organisms are present).

Wells<sup>49</sup> states also that histamin is formed from putrefactive products of protein material and Kendall and Schmitt<sup>50</sup> report that out of 65 gas bacilli included in the intestinal content 62 produced a histamin-like substance. In the saliva Hanke and Koessler<sup>51</sup> found that out of 37 specimens of sputum only 5 transformed histidin into histamin and 5 tyrosin into tyramin.

(2) Production of histamin from fermentative decarbozylation of histidin: It is not surely known that histamin originates in a fermentative way through the decarbozylation of histidin.

C. *Presence of histamin in various organs:* It has been known for a long time that the alcoholic or water extract of various organs, especially of the kidney and of the pituitary, diminishes the blood pressure of the cat and dog and brings contraction in the musculature of the uterus and intestine of guinea pigs. This property is in part due to choline. In the last few years, however, the presence of histamin in the various organ extracts has also been taken into consideration. In the spleen, Zueller<sup>52</sup> has found a hormone which following intravenous injection in rabbits produces considerable peristalsis of the small intestine and congestion of the blood vessels. The author thought that possibly histamin or an associated base plays a rôle in the above-mentioned results. Dale and Dudley found 8 mg. of histamin in one kg. of spleen tissue.

From the heart also a hormone has been isolated in which histamin is found to play an important part (Haberlandt<sup>53</sup>, Rigler<sup>54</sup>). In the lungs, Best, Dale, Dudley and Thorpe could isolate 30 mg.

of histamin per kg. of lung tissue in horses. The same authors found in the liver 1.58 mg. of histamin per kilo of tissue. Hanke and Koessler found 7.25 mg. of histamin dihydrochloride in 475 grams of dog liver. In the human liver the same authors could find no histamin present and also free of histamin was the liver of the guinea pig which they investigated. However, while negative results were obtained with chemical methods of determination the guinea pig liver disclosed the presence of histamin-like substances which biologically act as histamin, in the amount of 0.5 to 8 mg. of histamin per kg. of liver.

In the striped musculature the presence of histamin is not easy to detect chemically because of the difficulty of isolating it from other substances like methyl guanidine or amino-acid-like substances. However, Thorpe<sup>55</sup>, out of 35 kg. of muscular tissue, isolated 3.3 mg. of histamin. Histamin has been found by Barger and Dale<sup>56</sup> and later on by Abel and Kubotta<sup>57</sup> chemically detectable in the mucosa of the small intestine. Gerard<sup>58</sup> was able to find in isolated loops of the jejunum from .3 up to 10 mg. of histamin hydrochloride per 10 grams of mucosa. From the mucosa of the stomach, either of the pylorus or other areas of the stomach, a substance has been isolated, gastrine, which, according to Keeton, Koch and Luckhart<sup>59</sup>, and Lim<sup>60</sup> is considered to be a product close to histamin.

Abel and Kubotta thought that the active principle of the pituitary hormone was histamin. This theory is no longer accepted. It is now admitted, after the work of Schafer and his pupils<sup>61</sup> that in the pituitary we have at least two substances, one a pressor principle and the other a depressor one. The depressor principle can be extracted with alcohol and probably is identical with histamin.

In the skin a substance is found with the same biological reaction as histamin (Hosoya<sup>62</sup>). Harris<sup>63</sup> (1927) has compared the action of the skin extract of cats with histamin and found that the substance corresponds to 10 mg. of histamin per kg. of skin.

From the brain tissue a substance has been extracted which was thought to be a histamin-like substance but its biological property does not seem to be exactly the same as that of histamin (MacDowall<sup>64</sup>).

In the blood Harris found that the quantity of histamin was .25 to .5 mg. per kilo. This small content is not surprising when we consider how fast the histamin disappears from the blood.

In urine after administering large quantities of histamin Dehne<sup>65</sup> found a certain power of the urine over the uterus musculature, pointing to a histamin-like reaction. Urine following histamin shock has a positive Pauly reaction, an indication that the imidazol nucleus is not destroyed. It is possible that histamin in the urine may be present as glycyl histamin, a substance 100 times less toxic than histamin. Through breaking out of the glycyl histamin the poisonous histamin may be liberated, whereas, through hydrolysis, the histamin content of the urine increases its power. Parathyroid-ectomized dogs show histamin in the urine according to Koch<sup>66</sup> (1913). In eclampsia Revoltella<sup>67</sup> found presence of histamin. Buscaino has reported in urines of persons suffering from dementia præcox the presence of histamin which is responsible for the occurrence of his black reaction.

D. *Absorption of histamin:* Injection of histamin in the sub-arachnoid spaces has been found to have no effect on the blood pressure of dogs (Kakita<sup>68</sup>). Peculiarly enough, the lethal dose of histamin in intraperitoneal injection is somewhat larger than the lethal dose through subcutaneous injection. If the histamin is injected with a gelatine medium intraperitoneally its biological capacity increases. Through intravenous injections the effects of histamin are more rapid and stronger. Histamin introduced by mouth should be given in gelatin capsules or with the gastric tube so that it does not enter into contact with saliva which would help resorption. Histamin in gelatine capsules may be introduced in the stomach of guinea pigs without symptoms, whereas lethal shock may follow if the saliva in the mouth comes in contact with the substance. In an 800 gram guinea pig, 100 mg. of histamin introduced in the stomach produced only slight depression and profuse outflow of saliva and sneezing in the first hour. In the first two hours 60 per cent of the histamin was absorbed and 24 hours later only 1.6 per cent of the original histamin was found in the stomach (Koesler and Hanke). In man the use per os of 100 mg. does not elicit any appreciable reaction.

In the duodenum introduction of 50 to 100 mg. of histamin does not produce toxic symptoms or lowering of the blood pressure (Wangensteen and Loucks<sup>69</sup>) but after chloroform or acetyl alcohol or 0.4 per cent of hydrochloric acid is added to the content then 5 mg. of histamin dihydrochloride per kg. of body weight, which normally would produce no change in the blood pressure, will produce a prolonged lowering of the blood pressure.

The absorption from the small intestine is the most rapid as shown by Mellanby<sup>70</sup>. In an intestinal loop 25 cm. long, 30 to 90 per cent of histamin would disappear in the course of one to two and a half hours. This is due to absorption and not to bacterial breaking of the histamin. Near the cecum the absorption is still more rapid (Mellanby, Meakins and Harrington<sup>71</sup>) probably due to a more alkaline reaction of that portion of the gut. From the large intestine the histamin is only slightly absorbed. Fifty milligrams of histamin through a fistula in the large intestine produce a prolonged gastric secretion and the histamin absorbed in the blood corresponds biologically to a concentration of one to ten millions. Absorption in the cecum is quickly increased when chloroform, ethyl alcohol or hydrochloric acid is introduced in the colon. The histamin is absorbed through the blood and not through the lymph and reaches, therefore, the various organs.

Lethal doses of histamin in various animals are reported in the following table (after Feldberg and Schilf).

Type of animal	Lethal dose per kg. of body weight in mg. of histamin	
	By subcutaneous injection	By intravenous injection
Guinea pig	3, 5—10	0, 3
Rabbit	12—15	0, 6—3
Pigeon	—	1, 5
Dog	28, 5	almost 3
Cat	34	—
Monkey	—	50
Mouse	600—2000	250
Rat	—	170—500
Cuttle fish	—	400—600
Frog	1700 (dorsal lymph sac)	1700

E. *Physiological and pathological action of histamin:* Most of the following data, collected from the monograph (1930) of Feldberg and Schilf<sup>47</sup>, show that in the cat, which has been the animal used in our experimental investigation, intravenous injection of two to ten mg. of histamin produces a large intestinal peristalsis, defecation, profuse salivation, and increased respiration and light narcosis and collapse with slowing circulation. The ears are very warm, the pupils very miotic, the reflexes are lost. The symptoms following subcutaneous injection are the same but develop gradually and appear after six minutes following subcutaneous injection of 5 mg. The maximum dose which is tolerated by subcutaneous injection is 25 mg. per kilo.

In man the subcutaneous injection of small doses of one-third to one-half mg. produces at the site of injection a blister with a surrounding red circle. At the site of injection the individual feels a painful itch. The general phenomena may be absent following injection of one-third to one-half mg. of histamin subcutaneously but in some cases there is slight diminution of the blood pressure, especially of the diastolic and slight increase in the pulse rate. The manifestations disappear in 36 minutes. During this time the patient may have a warm feeling of the head, a feeling of tension in the face and neck, a sense of slight discomfort, vertigo, and slight headache. In patients suffering from migraine an attack may be elicited.

Small intravenous doses of 0.015 mg. in a 70-75 kilo man produce manifestations which are essentially the same though they appear sooner. Following the intravenous injection the subject feels a salty metallic taste in the back of the mouth. Patients with tendency to asthma, react very strongly to small intravenous doses of histamin. With larger subcutaneous doses the general manifestations increase in intensity and, according to Schenk<sup>72</sup>, the blood pressure may be lowered considerably, the pulse rate may double, the salty metallic taste may be stronger, and headache, especially in the back of the head, is intolerable. There is nausea or very strong vomiting, dizziness, difficulty in breathing in the form of respiratory dyspnea, stopping of respiration and cramps as described by Kehr<sup>73</sup>



(1912). The phenomena disappear through a concomitant injection of adrenalin.

Mutch<sup>74</sup> thought that histamin might be responsible for some of the low blood pressures found in autointoxication because he found histamin-producing organisms in some feces from bowels removed by Lane in 1914. Mellanby felt that histamin might play a part in some of the diarrheas of infancy because of its powerful stimulating effect on smooth muscles. The work of F. C. Lee<sup>75</sup> (1925) on the effect of histamin on cerebrospinal fluid pressure showed a definite fall in blood pressure after injection of histamin in dogs and cats under ether anesthesia. He states that although the visceral capillaries dilate markedly after histamin injection the capillaries in the brain do not react in this way.

In 1929 Forbes, Wolfe and Cobb<sup>76</sup> investigated the effect of histamin on the cerebral circulation. They quote Weiss and Leonard<sup>77</sup> as finding a rise in cerebrospinal fluid pressure in 60 anesthetized patients. The authors found variable results depending on the anesthetic used. Under amytal the cerebral vessels dilated and the pressure rose. Under ether, vessels already dilated often become narrower and the spinal pressure falls. The local application of histamin to brain surface results in dilatation of vessels with no effect on pressure. The intravenous injection of histamin under amytal causes pial artery dilatation in spite of coincidental fall in arterial pressure. They state that chemical changes in the blood may be often more powerful than alterations in systemic blood pressure as a means of regulating the calibre of pial blood vessels in animals.

Wells calls attention to the profound toxic effect of histamin by citing its resemblance to anaphylactic shock and noting its marked effect on the bronchial musculature. Injection of .5 mg. in guinea pigs may produce asphyxia with distended lungs as in fatal anaphylaxis. In 1919 Dale and Laidlaw<sup>78</sup> discussed histamin shock in great detail showing the profound toxicity of the substance when injected. Besides the widening of the capillary bed they stressed the thickening of the blood plasma due in some measure to the loss of blood volume owing to pathological permeability of the endothelium. Important is their statement that if the histamin reaction



occurred locally, it would be recognized as a mild inflammation. For Dale and Laidlaw the action of histamin cannot be summarized with reference to any division of the autonomic nervous system like that of some other amines. The fundamental and characteristic feature of the action is its direct stimulant effect on plain muscles in which it produces exaggeration of rhythm with increased tonus or steady maximum tonus unbroken by rhythm according to the concentration in which it is applied. The sensitiveness of plain muscle in different organs and in different species varies within wide limits. The most sensitive organs appear to be the plain muscles of the uterus. The muscular coats of the bronchials are also highly sensitive to the action, especially in the rodents. The plain muscles of the intestinal wall, of the arteries, and of the spleen appear to occupy an intermediate position as regards responsiveness; that of the bladder and of the iris is not perceptibly affected by the action of such doses as employed. Cardiac muscle is mildly stimulated by the drug. Skeletal muscle is not perceptibly affected in any way. The result is general visceral dilatation in which the kidney vessels do not participate causing a fall in systemic blood pressure. The pulmonary arterials, on the other hand, constrict in response to the drug whether in the body or isolated. Thus histamin produces in carnivora the association of a rise in pulmonary with a fall in systemic pressure. Narcosis is also observed in carnivora and a constricted pupil may be regarded as a feature of the narcotic effect since it is not produced by histamin in an otherwise anesthetized animal. In addition the base has a mild direct stimulant action on the activity of the salivary gland and the pancreas. This secretory effect being paralyzed by atropine may be regarded as a weak action of the pilocarpine type. The association has some interest in that pilocarpine also contains an iminazol ring.

Drake and Tisdall<sup>79</sup> reported in 1926 on the effect of histamin on the blood chlorides showing a definite reduction in plasma chlorides in dogs following subcutaneous injection of the drug. This loss was found not to be due to loss of chlorine in the gastric juice.

Beaumont S. Cornell<sup>80</sup> showed the immediate fall in blood cholesterol following ingestion or injection of histamin. There was a fall

of 10 to 30 per cent of blood cholesterol within 10 to 30 minutes after the administration of histamin which could not be accounted for by the gastric mucosa having taken it up.

F. *Detoxication of histamin*: In 1929 Leland C. Wyman<sup>81</sup> demonstrated the striking effects of histamin in suprarenal insufficiency. He reported the lethal intraperitoneal dose of histamin for normal albino rats to be more than 100 mg. per 100 grams of body weight. The minimum lethal dose for suprarenalectomized rats was found to be about 7 mg. per 100 grams of body weight. This increased susceptibility was found to be due to lack of medullary tissue. Thus the minimum lethal dose for suprarenalectomized animals was about 1/14, the minimum lethal dose for the normal animal. A few years previously (1921) Dale<sup>82</sup> had found that the blood pressure-lowering effect of histamin was ten times greater in desuprarenalized than in normal rats. Banting and Gairns (1926)<sup>83</sup> showed that following double suprarenalectomy on dogs, histamin is about 30 times more toxic. Therefore, they feel that the above findings make it seem reasonable to believe that in the normal animal the suprarenal enables the body to handle poisons which in the absence of the suprarenals accumulate, producing death. Many subsidiary findings tend to substantiate this view. For instance, it was found that intercurrent infection such as distemper, infected wounds, tissue damage and hemorrhage at the time of operation all tend to shorten the time of survival.

Wells makes a rather general statement that products of putrefaction of protein material are all detoxified by the liver, this detoxication being accomplished by the deaminization and oxidation, the resulting carbozylic acids being excreted or burned. This view seems to be accepted by Feldberg and Schilf who feel that the detoxication of the amine occurs through two phases: (1) the amine through the process of deaminization liberates a corresponding alcohol which later on (2) is transformed into a corresponding acid. In a certain amount of time only a certain amount of amine can be rendered unharmed while if the dose be increased acute toxic changes leading to death may follow. The acute toxic doses vary for the various types of amine. It is the smallest for histamin and greatest for isoamylamine.

It seems, however, that the liver plays a more important rôle in detoxifying other types of amines than histamin. However, Dale and Richards<sup>84</sup> first showed that the reaction of histamin was milder following intraportal injection than when the histamin is injected in the peripheral veins, thus concluding that one part of the histamin is destroyed in the liver before it reaches the general circulation. Such experiments have been confirmed in cats and dogs by Feldberg and Schilf. It is possible that the passage through the liver may not detoxify histamin chemically but that this passage acts so to say in a chemical way because of the fact that the substance injected in the portal vein has to pass through two capillary networks, the pulmonary and the hepatic, acting as a buffer, whereas the substance injected directly in the gross circulation intravenously has to pass only one capillary network, the pulmonary one.

Whereas the action of the liver as a detoxifying medium is still debated, there are factors in favor of the detoxifying action of the intestine. Koessler and Hanke, in favor of the detoxifying action of the intestinal walls, report experiments in which histamin was introduced directly into the stomach or into the intestine. Over half of the amine is absorbed within two hours. A small fraction of the amine appears later on in the intestinal wall and a small amount is present in the liver from which facts the authors conclude that some of the amine is absorbed as such. But if all the histamin that disappeared from the alimentary tract had been absorbed as such and cast into the general circulation this would have been at the rate of 0.5 mg. per minute for guinea pigs or 2.2 mg. for the dog. This would certainly lead to the death of the guinea pig and would probably eventually kill the dog, whereas, the guinea pig was only mildly ill and the dog showed no symptoms of any kind. The authors, therefore, draw the inference that histamin may be rendered pharmacologically inert in its passage through the walls of the intestine. On this assumption injury to the intestine might, under suitable conditions, lead to grave symptoms of histamin intoxication.

Feldberg and Schilf feel that the lungs may play a part in the elimination of the histamin from the blood circulation. They base

their contention on the statement of Best, Daley, Dudley and Thorpe that it is possible that the lung may store histamin taken away from the blood circulation. The blood, gastric juice, and saliva seem to possess no detoxifying action against histamin as this substance is not destroyed when it is put in contact for hours with defibrinized blood, serum, gastric juice or saliva.

(TO BE CONTINUED IN JANUARY, 1933, NUMBER)

## A CASE OF SKULL DEFORMITY RELATED TO THE SO-CALLED ACROCEPHALOSYNDACTYLIA\*

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A white boy, 6 years and 3 months of age, was referred to the New York State Psychiatric Institute and Hospital because of slow progress in school and defective speech.

*Family History:* Father is 40 years of age, completed a common school education, had a variety of jobs at none of which he was particularly successful. He was married first at the age of 21 but "because of interference from his mother-in-law," the family broke up, his wife going back to her family and he to Alaska. A divorce was obtained. There was one child from this marriage. In Alaska he was a prospector for gold and it was here that he met the patient's mother. This second marriage ended in a divorce about two years ago because, it is stated, of alcoholism and extra-marital relations on the part of the patient's father.

Mother is 40 years of age, with a common school education and a nurse's training. She went to Alaska as a missionary. She is stated to be suffering at the present time from a thyroid condition, the details, however, are unknown. She is a somewhat quiet, introverted type of individual.

There is nothing of note among either the maternal or paternal aunts or uncles. Data concerning the grandparents are unreliable.

In the patient's fraternity, there is first the patient; second, a boy born 1927. He is apparently a bright, sociable child. The third is a girl, born 1929. She seems to be a happy, normal baby.

*Birth History:* During the first months of pregnancy, the mother, suffered severely the effects of inadequate diet, due to the shortage of fresh foods in Alaska, where she resided at that time. She became gradually very toxic, and eclampsia was feared in a later period of pregnancy. For this reason the mother was advised to leave Alaska. She did so, with the result that on more adequate diet her health markedly improved. However, the birth occurred five weeks prematurely.

\* From the Research Department of Letchworth Village and Childrens' Service of the New York Psychiatric Institute and Hospital.







Fig. 1.



Our Patient

Fig. 2.

*Personal History:* The premature child weighed  $4\frac{1}{2}$  pounds at birth. Unbilical and bilateral inguinal hernia were present at birth; these were later repaired. The right testicle was undescended. During his infancy he presented no problem so far as his feeding was concerned. His first tooth did not appear, however, until the age of 18 months. He did not walk until the age of 2 years. At the age of one year, he was able to say two or three one-syllable words; later he never acquired the ability to make sentences to any appreciable degree. The mother early noticed that he was near-sighted and had difficulty with his vision. He has always been enuretic. He has had no serious illnesses.

*Present Status and Interpretation of the Case:* During the observation of the child it was noted that rhinolalia aperta (or open nasalizing, when the vowels acquire undue nasal resonance), and sigmatismus (or the inability to produce the sound "S") were the essential elements of child's speech difficulties. It was noticed, also, that the boy used exclusively very short stereotypic phrases, and never talked loudly. It appeared as if the boy, having a very distinct insight into his speech defects found a solution of all his difficulties in the evasion of any situation requiring a reaction in terms of language. He showed a negativistic attitude and exhibited temper tantrums of a mild degree which also were traceable to efforts at evading the use of speech. On a closer contact with the child one rather hesitated to pronounce the boy below par intellectually. In fact, a series of mental tests, particularly those not dependent on verbal responses rated him as of average mentality. Nevertheless, the general appearance of the boy (see Fig. 1), his deportment and reactions to surroundings were those of a backward child.

The peculiarities of the facial features and the shape of the head suggested an interpretation of the case on the basis of those phenomena that lead to oxycephaly and allied cranial deformities, namely on the basis of the faulty adjustability of the skull to the growing brain of the child<sup>1, 2</sup>. Further study of the case showed that it was definitely related to the variety of oxycephaly known as acrocephalosyndactylia. Fig. 2 is an attempt to demonstrate the morphological resemblance of the shape of the patient's head with the typical acrocephalic child described by Park and Powers.<sup>3</sup> The

following description of the morphological characteristics of the patient's head is comparable, in its essentials, to the reproduced photograph of Park and Powers' case. The head is disproportionately high, short anteroposteriorly, and wide laterally. The distance from the ears to the top of the head is especially increased. The eyes bulge. The forehead is high and wide; it rises straight up; the occipital protuberance is less prominent than usual and above the protuberance the occiput appears to be flattened and as though pushed forward. Owing to these peculiarities in the shape of the head the planes of the face and occiput tend to converge from below upwards and an impression is created as though the cranial vault overhung the face. In the X-ray of the skull (Fig. 3) marked convolutional digitations (craniostenosis) represent an additional characteristic of oxycephaly.

In oxycephaly proper the changes in the shape of the head are brought about as a result of an intracranial process and are thus limited to the skull. Apert,<sup>4</sup> in his original contribution, and subsequent writers on the subject were dealing with cases in which, besides the oxycephalic features, a symmetrical bilateral webbing of the fingers (and toes) was a concomitant element of the entity. This was described by the term, coined by Apert, as "Acrocephalosyndactylia" (literally—"sharp-headed digit-webbedness"). However, acrocephalosyndactylia is apparently one of several clinical forms conditioned by a general faulty osteogenesis. Certain oxycephalics show signs of dysostosis in remote parts of the body, namely in the spinal column, joints, etc., which should be looked upon as expressions of a general dysostosis and classified with the cases of typical acrocephalosyndactylia.<sup>1, 2, 5, 6</sup>

Our patient, in addition to the oxycephalic head, showed a spina bifida of the upper vertebrae (Fig. 4), a prognatism of the lower jaw, uvula bifida, a frenulum attaching the upper lip to the gum, umbilical and bilateral inguinal hernias, a congenital heart defect, and an undescended right testicle. These findings indicate a general developmental disorder and thus justify the consideration of the case as being pathogenetically related to acrocephalosyndactylia.

An extreme degree of a faulty palate development was observed

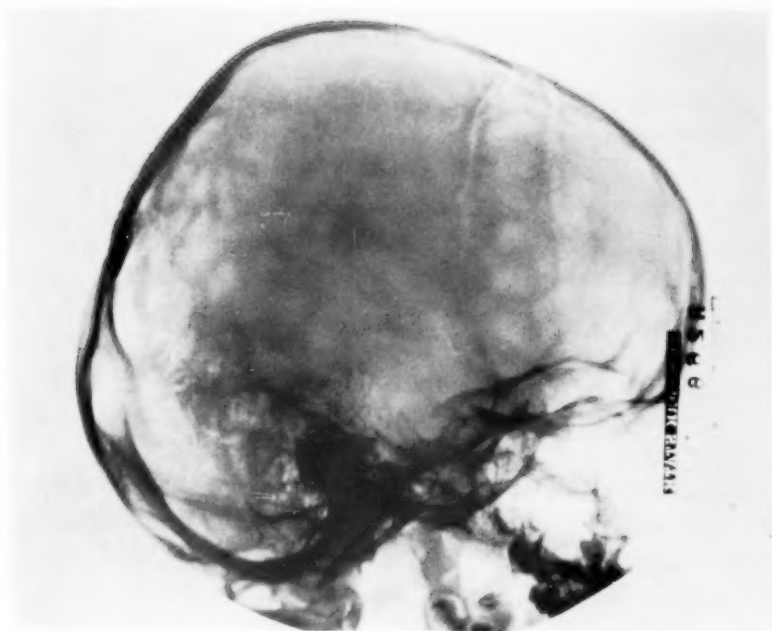


Fig. 3.

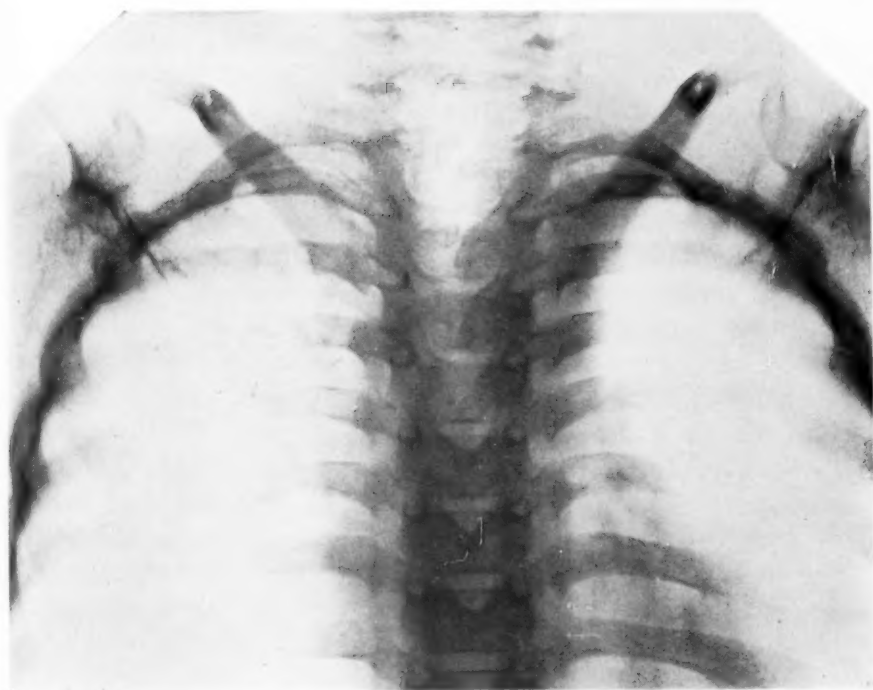


Fig. 4.



in nearly half of the cases of acrocephalic disostosis reported in the literature. Palate mal-developments of a less degree were recorded in a majority of the others, (Park and Powers,<sup>3</sup> Bigot,<sup>7</sup> etc.). Thus the condition of the palate may be regarded as an important diagnostic aid. It is known that speech difficulties such as nasalizing, sigmatism, shortness of breath during conversation, etc., usually depend upon various degrees of cleft palate or minor functional insufficiencies of the oral cavity. Therefore, the formation of the oral cavity of our patient was of special significance. His palate was bulky and short. The uvula was deeply split. The velum revealed two divergent strands that appeared to be the direct submucous prolongations of the split of the uvula. An attempt to find more definite evidences of a submucous cleft of the palate were made but intra-oral palpation was unsatisfactory and a number of attempts to take an X-ray of the palate were unsuccessful. However, a partial inefficiency of the palate, the organ for separating the nasopharynx from the rest of the pharynx, was readily demonstrable through certain observations and tests. The excursions of the soft palate were markedly limited; the patient could not learn to whistle; the task of blowing out a lighted match could not be performed except when the match was placed very close to the mouth; a cold mirror placed before the nares when the patient produced the sound "ah" was clouded by the excessive amount of humid air escaping through the nose. Sounds dependent upon an adequate isolation of the nasopharynx from the rest of the pharynx were incorrectly produced. The boy, losing too much air through the nose while speaking experienced shortness of breath; he, therefore, resorted to the use of short stereotypic phrases. Thus the speech defect in this boy appears to be not a mere coincidence but an expression of a general mal-development, stigmatized by the oxycephalic head, insufficiency of the palate, spina bifida, etc. All these stigmata, taken collectively substantiate the interpretation of the case as one related to acrocephalosyndactylia.

In regard to the *etiology* of the condition a number of hypotheses exists. At the present time one is hardly justified in preferring any of them. However, the gross defects in the diet fol-



lowed by severe toxic condition during the first months of pregnancy, (as it occurred in the case under discussion) could be interpreted in favor of the theory ascribing the origin of birth defects or anomalies to the changes in the chemical constitution of the amniotic fluid in which the egg is developed, just as it has been observed experimentally on lower animals.

Proper *treatment* of his shortcomings secured necessary cooperation of the patient; the temper tantrums were replaced by a persistent effort on the part of the patient to improve and develop his speech. Through special training the boy learned gradually to make use of accessory muscle to compensate for the insufficiency of his palate. It might be interesting that at this time the test of blowing out a lighted match, became for the boy, a simple task requiring, however, an extensive use of mimic muscles. Plastic surgery to repair the defect of the palate<sup>s</sup> might be considered as a further step in the treatment.

The *prognosis* must be guarded. Since the patient is only 8 years of age, it may be assumed that further adjustment of the skull to compensate for the growth of the brain will be necessary later on, and it is possible that a faulty adjustability of the skull may be the cause in the future of additional injury to the growing brain of the child.

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## DIMENSIONS OF THE LIVING HEART IN SCHIZOPHRENIA

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In any worthwhile appraisal of an individual both mental and physical characteristics must be taken into consideration. For sometime it has been known that there is a relationship between physique and the physical disease with which one is likely to suffer. Efforts are now being made to correlate physical make-up with various mental disorders.

Mills has formulated a classification of physical types and, more recently, Kretschmer has listed specifications which are of great assistance in classifying people. His grouping is somewhat similar to that of Mills, but he uses different terms. It is notable that he says that the impressionistic classification may be more correct than that acquired by measurements. This is very important and may suggest that there is something about people which, though helping to classify them physically, cannot be expressed in mere terms of dimension. That something probably has to do with characteristics which we are not yet able to define in words, something which, as our capacity increases, we may be able to measure and express with precision.

Outstanding among claims of physical findings in functional mental diseases is the opinion of some that the heart is congenitally small in schizophrenia. A couple of years ago, the writer reported on the weight of the heart in this disease; somewhat later investigated the circulatory rating and during the past three years has been accumulating data with a hope of learning something about the dimensions of the living heart in these patients. A total of 204 cases of physically sound schizophrenics have been studied and compared with a like number of healthy individuals.

About twenty years ago, there was introduced an improved means of examining the heart. Clinicians had been able to judge the size of this organ only by percussion, palpation, inspection, and auscultation. These methods were inadequate. The Roentgen ray offered more accurate measurement and has been used in various way, viz., by fluoroscopy, by orthodiagraphy and by a combina-

tion of teleroentgenography and fluoroscopy. Naturally, most of the work has been done on normal hearts, and in connection with cardiac lesions in patients applying to internists for relief of symptoms directly referable to the circulatory system. Some observations have been made to correlate heart characteristics with various physical types. The writer has been unable to find a report of an effort to estimate the size of the living heart in relation to functional mental disorders.

The method used in the experiment carried out at the Central Islip State Hospital, consisted of a combination of fluoroscopy and teleroentgenography. The subject, after a careful physical examination, including determination of blood pressure, was placed in a standing position behind a fluoroscopic screen facing the examiner. Pulmonary tuberculosis and other abnormalities of the viscera were looked for. Position, shape and excursion of the diaphragm were observed. The outlines of the heart shadow were traced. Its relative position, movements with respiration, and any change of shape which might occur with a change of position of the individual, were noted. He was then asked to leave the fluoroscopic room and a roentgenogram was taken as he stood with chest against the cassette, which was placed seven feet from the target of the tube, centered on an imaginary line across the back two inches above the angles of the scapulae. In taking the pictures, a relatively long exposure was practiced in order to get a full heart cycle, the shadow obtained being that of the heart in diastole. The film was then developed. After it was dry, the heart shadow was traced with a lead pencil. In these preliminary calculations, three dimensions were made use of, viz., the greatest width, the length and the width at the base. The size was represented by combining these three dimensions expressed in centimeters. There was no way to obtain antero-posterior diameters satisfactorily. The greatest width was obtained by adding the length of two transverse lines, one starting at a point farthest to the left on the margin of the shadow and ending on the mid-line drawn vertically through the middle of the shadows of the vertebrae; the other starting at a point farthest to the right on the margin of the shadow and ending on the mid-line. The length was determined by measuring a diagonal line which

starts at the point of junction of the right auricle with the great vessels and ends at the apex. The diameter at the base was represented by the combined length of two perpendiculars to this diagonal line, one extending to a point on the left auricle appendage, the other to the point of junction of the right auricle and the right diaphragm. Other lines are drawn by some roentgenologists but the ones described here are considered quite sufficient.

Normally, the size, shape and position of the heart are influenced by the position of the diaphragm, as well as by the size and shape of the thorax, and age, sex, height and weight of the subject. The number of individuals represented in this report is not large enough to warrant dividing into groups according to all of these factors and the physical types referred to.

In the following tables, only the age, sex and position of the heart in the chest have been considered for psychotics and controls, except that in table No. 2 psychotics were grouped as to type of schizophrenia. The size of the heart was determined as previously stated.

Hypoplastic and perpendicularly placed heart has been said to prevail in schizophrenia. It is called the "drop" heart. In this series, perpendicularly placed hearts were more often found in male controls than in patients but were more commonly found in female patients than normal women. About half of the hearts so placed, whether in psychotics or controls, were above average size. A heart which is both small and "hanging" the writer would consider to be a stigma of degeneration. Hypoplastic heart has been reported as being common in tuberculosis. That it is the prevailing type in schizophrenics is not borne out by this experiment. Tuberculous material was not included. Manifestly, individuals possessing hypoplastic heart, damp, cold and cyanosed extremities, flat-chest with very acute sub-costal angles, dished-out lower end of sternum and absence of ensiform appendix, or any other considerable number of stigmata, are doubtless made up of poor material, inherited from poorly constituted ancestors. They may be expected to succumb readily to disease, such as tuberculosis, migraine, epilepsy, hysteria, the neuroses, etc.

However, it is the writer's belief that small heart is not a symp-

tom of uncomplicated schizophrenia. This opinion has been based on the examination of the recorded weight of hearts in what appeared to be adequate material, on cardio-vascular rating of a large number of schizophrenics and controls; finally, on the information contained in the following tables:

TABLE NO. 1. SIZE OF THE LIVING HEART IN SCHIZOPHRENIA (COMBINED DIMENSIONS)

	All cases	Normal men	Schizophrenic men	Normal women	Schizophrenic women
Number	409	87	112	114	96
Average size, cm.	34.9	34.2	35.9	34.0	34.4

In both sexes the average size of the heart was somewhat larger in patients than in controls.

The figures in Table No. 2 indicate that the size of the heart tends to increase slightly as an individual advances in age and this is probably as true of schizophrenics as of normal individuals. The fact is apparent in the larger psychotic groups but in the smaller groups of catatonics, here represented, it is not demonstrated. In no group of schizophrenics was the heart much smaller than in controls except in the catatonic men, 31 to 35 years of age, where the average of three cases was 1.2 cms. smaller than in the controls.

Grouped according to direction of long diameter, distance of right and left border from midline and size of heart the material showed the following:

TABLE NO. 3. POSITION OF HEART

	All cases	Tending towards hypoplastic or drop heart		Tending towards mitral or barrel shape		Tending towards aortic or transversely placed heart	
		Number	Per cent	Number	Per cent	Number	Per cent
Men, schizophrenic	112	13	11	71	63	28	25
Women, schizophrenic	96	21	22	57	59	18	19
Men, controls	87	15	17	61	70	11	12
Women, controls	114	18	16	77	68	19	17

TABLE NO. 2. SIZE OF THE HEART IN RELATION TO THE AGE AND TYPE OF SCHIZOPHRENIA

	All cases		Ages 20 to 25 years		Ages 26 to 30 years		Ages 31 to 35 years		Ages 36 to 40 years	
	No.	Av. size, cm.	No.	Av. size, cm.	No.	Av. size, cm.	No.	Av. size, cm.	No.	Av. size, cm.
Normal, men	87	34.2	42	35.0	25	35.3	11	35.9	9	35.9
All schizophrenic, men	112	35.9	17	35.7	30	35.8	28	35.2	37	36.5
Paranoid, men	38	35.7	7	35.7	9	35.7	9	35.2	13	36.0
Hebephrenic, men	67	36.1	10	35.8	17	36.2	16	35.3	24	36.7
Catatonic, men	7	34.7	0	0	4	34.7	3	34.7	0	0
Normal, women	114	34.0	80	33.9	10	34.2	13	33.5	11	34.8
All schizophrenic, women	96	34.4	24	34.0	25	34.5	27	34.5	20	34.6
Paranoid, women	61	34.1	16	33.3	16	34.3	13	33.9	16	34.7
Hebephrenic, women	26	34.7	7	35.4	6	33.9	10	34.8	3	34.2
Catatonic, women	9	36.0	1	36.8	3	36.8	4	35.6	1	34.0



As no case, employee or patient, who had any discoverable circulatory or other physical disease was included no mitral or aortic hearts were observed but all of the individuals examined had hearts which could be grouped according to position into three groups: viz., those placed perpendicularly in the chest, those placed diagonally and those horizontally placed..

Exactly 33 per cent of patients and the same percentage of employees had hearts perpendicularly placed but such hearts were found more commonly in female patients than in female employees while the reverse was true in dealing with males. The figures in Table No. 3 would seem to indicate that drop heart is not characteristic of the dementia præcox constitution.

## A METHOD OF MOUNTING THIN SECTIONS OF BRAIN FOR MUSEUM DISPLAY\*

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The normal friability of brain tissue is a factor productive of exceptional difficulty in the permanent mounting of thin sections of such tissue in museum jars for purposes of display. For various reasons no one of the many methods heretofore employed in preparing these specimens has been thoroughly satisfactory. The most common method, in which the specimen is maintained in the upright position upon glass-rod supports, presents a signal disadvantage in that the section must be attached to its supports by thread. This thread very readily lacerates the specimen when the jar is handled or transported. Satisfactory mounting of specimens for exhibition demands good presentability, stability in position, adequate preservation of the tissue, and the use of a medium that will not destroy or modify the pathological picture which it is desired to present to view. It is of course important that the expense and labor involved in securing such satisfactory mounting should be held to a reasonable minimum. It is believed that the method described in the following paragraphs will be found to possess in higher measure than other and previous methods the requirements above mentioned.

A museum jar (of the ordinary rectangular type) whose height and width are adequate for accommodation of the specimen is selected. It is not necessary to attempt to exact coordination between the thickness of the specimen and the *depth* of the jar from front to back. A pane of glass is so cut that its length and breadth will approximately equal those of the inner aspect of that face of the jar through which the specimen is to be viewed. Two smaller panes of glass are so cut that they can be used as "wing" supports as shown in Figure 1. Several days before use these panes of glass must be painted over one side with pure asphaltum, and they must be absolutely dry before the actual mounting is done. The specimen is carefully washed and placed in the jar in such position

\* From the Department of Neuropathology, New York Psychiatric Institute.

that the surface which it is desired to exhibit is in contact with one face of the jar. The larger pane of blackened glass is inserted behind and in contact with the back of the specimen to serve as a background. The "wing" supports of blackened glass are placed in position as shown in Fig. 1. Cotton wool moistened with the preservative is packed fairly tightly into the space between the "wing" supports, and preservative fluid is then added in sufficient amount to fill the jar. The cover of the jar is placed in position and sealed with asphalt cement, and the entire external surface of the jar except the face against which the specimen rests is painted a glossy black. This increases the presentability of the ensemble and conceals the supporting elements. The "wing" supports are self-retaining, and the slight swelling of the cotton wool due to its saturation with the preservative fluid fixes them even more firmly in place.

This method of mounting is simple and inexpensive. The specimen is well preserved and is held so securely in position as to allow free handling and transportation without danger of laceration or disarrangement. As a museum exhibit the whole possesses a high degree of presentability.

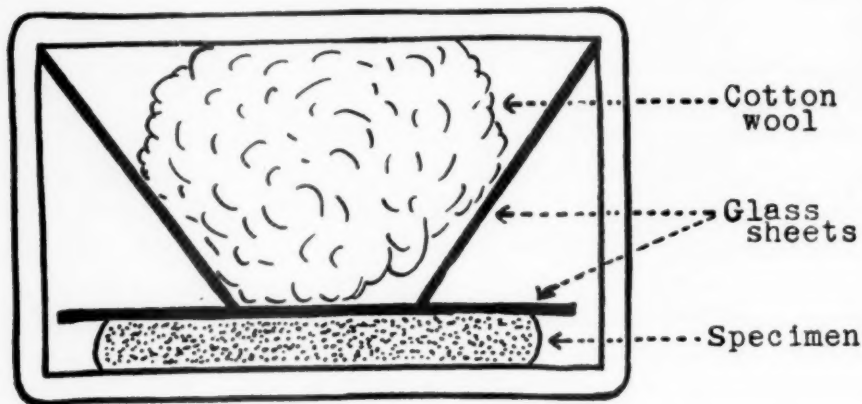


Fig. 1. Diagram of top of museum jar showing the method of supporting specimen. (Thickness of specimen must of course be less than the depth of jar from front to back.) The glass "wing" supports placed at an angle serve to maintain specimen in proper position and to prevent cotton wool from shifting its position and appearing at edge of pane of glass which stands behind specimen.

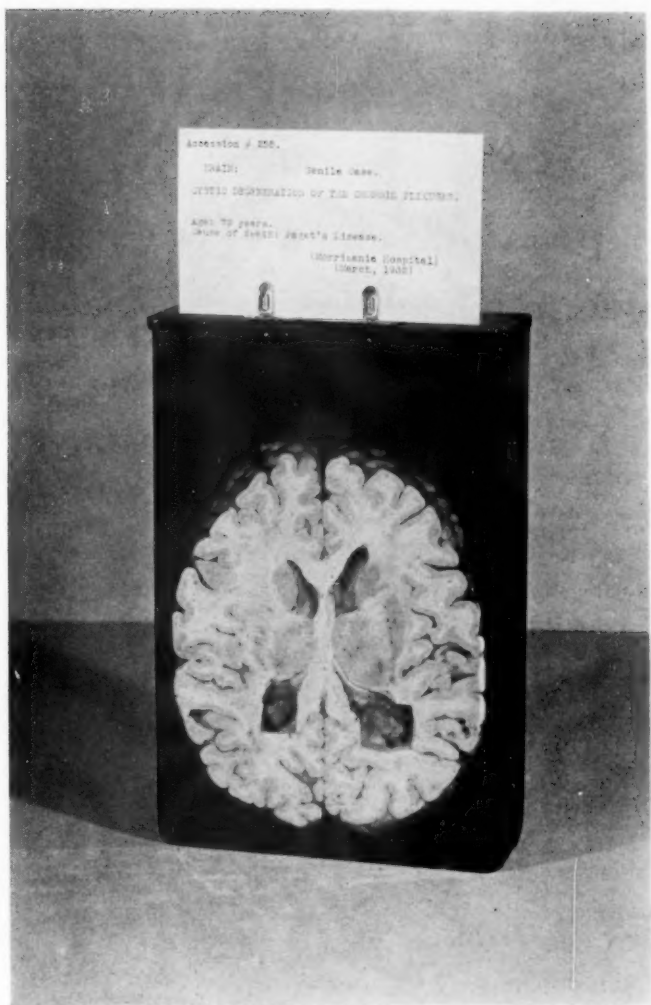


Fig. 2. Photograph of finished mount. Supporting elements are invisible. Jar can be inverted without disturbance of specimen. In this particular mount, thickness of section is only one-fourth of depth of jar from front to back.



## PERSONALITY AND CATATONIC DEMENTIA PRAECOX\*

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In accordance with the plan suggested for this symposium, the clinical syndrome selected for the study is confined to catatonia in dementia praecox, according to the outline of this condition presented by Hinsie.<sup>1</sup> In general, the clinical symptomatology was such as to lead easily to a diagnosis. As a rule, patients have been under study and observation for several years, during which time the original diagnosis of catatonia in dementia praecox has been retained. Consequently the group on which the report is based is uniform as regards diagnosis.

In the selection of cases for this report care was taken to discard any in which there was a complicating physical factor such as any of the infectious disorders (acute or chronic), any other known somatic diseases, or any traumatic condition that could with reasonable certainty be regarded as a complication. For instance, occasionally a catatonic-like reaction is observed with epidemic encephalitis. In such an event it is the prevailing opinion that the syndrome has been set free by the infectious process, or by something associated with it. A similar condition may follow any injury to somatic structure. The feeble-minded group was also eliminated.

The cases, therefore, referred to in this communication were selected on a basis of the following findings: first, a clear-cut syndrome that meets the requirements for a diagnosis of catatonia in dementia praecox; second, the absence of any recognizable somatic disease that could reasonably be associated with the clinical syndrome; third, the exclusion of the feeble-minded.

Information was not obtained from the patient but from fairly reliable parents, siblings and associates, (school teachers, employers and others). The material is therefore objective.

In each instance the personality study was summarized and the traits evaluated only after the total life span of the individual had

\* This paper comprised part of a symposium on catatonic dementia praecox, held at the New York State Psychiatric Institute and Hospital, April 20, 1932 and at the Utica State Hospital, April 27, 1932.

From the Clinical Department of the New York State Psychiatric Institute and Hospital.



been considered. In this report no effort is made to interpret what has been described and the emphasis is centered on the personality factors.

The term personality refers to the picture of an individual that one may acquire as a result of data obtained through the study of the individual as outlined by Kirby<sup>2</sup> on a basis of the earlier formulations of Hoch and Amsden.<sup>3</sup>

It is not easy to reduce the term personality to a definition; it is better understood by description. One may, however, find various definitions in the Proceedings of the Second Colloquium on Personality.<sup>4</sup> Although these do not lay claim to final and complete definition they are helpful to a general orientation.

Healy<sup>4</sup> defines personality as: "The individual's habitual attitudes, characteristics, and behavior tendencies." There are, Healy states, two possible pictures of personality. "First, the real or whole personality as comprised of all components, many of which are only a part of the individual's private equipment and conduct indiscernible to others. Such a picture of the total personality can probably never be completed, and can be attempted only through the utilization of several scientific techniques. Second, a smaller picture, a part of the above as made up of outlines, and details of specific observations and interpretations of onlookers. This delineation even though it may attempt to use only the materials of objective data, inevitably has its colorings partly determined by the receptive and interpretative attitudes of the observers themselves." It would seem obvious that the personality implies a fluid reaction, and cannot well be represented by static symbols. Nevertheless, as a means of general orientation one may gain an impression by a schematic representation.

In estimating the personality factors one studies the *direction* of the flow of interests as well as the relative balance of interests in the self and *away from* the self. An individual's libido is never invested wholly in himself or wholly in his environment. Under given circumstances there is a piling up of interests on either one side or the other. According to Meyer,<sup>5</sup> a set of preferred reactions or habit patterns is set up, as a result of experiences extending particularly over the years of childhood.

Jung<sup>6</sup> in his formulation of psychological types developed the viewpoint of extraversion and introversion. He designated those individuals who are chiefly determined in their motivation by the outer object as *extraverts*, and, on the other hand, those who respond in the majority of instances to the demands of the self as *introverts*. The *normal individual* is equally balanced in point of view of extraversion and introversion.

From the viewpoints just expressed the 25 patients around whom the present study is built exhibited the balance of interests as represented in the following arrangement:

	Patients
Approximately equal balance of introversion and extraversion .....	15
Definitely introverted .....	9
Definitely extraverted .....	1

Hoch<sup>7</sup> in his work on functional psychoses observed that in the dementia præcox group a certain type of personality recurred with great frequency. He referred to it as the shut-in personality and described it in the following terms. Individuals in this group are those "who do not have a natural tendency to be open and to get into contact with the environment, who are reticent, seclusive, who cannot adapt themselves to situations, who are hard to influence, often sensitive and stubborn, but the latter more in a passive than in an active way. They show little interest in what goes on, often do not participate in the pleasures, cares, and pursuits of those about them; although often sensitive they do not let others know what their conflicts are; they do not unburden their minds, are shy, and have a tendency to live in a world of fancies."

In our own group of 25 patients 9 were described definitely as of the shut-in type. In the remaining 16 there was not the same definite seclusive tendency although 9 of the individuals exhibited slightly more introverted than extraverted tendencies; 3 showed a slight preponderance of extraverted tendencies, while regarding 4 it could not be stated that one tendency was in excess of the other.

The personality outline which has been used in this study is that of Kirby<sup>2</sup> as revised from that of Hoch and Amsden.<sup>3</sup> The number of cases showing various character traits is shown in the ac-

companying tables. The percentages are not given because the number of cases studied, namely 25, is too few to be of value for statistical purposes. It is felt, however, that the figures given may be of value to other workers and should be available in the literature. In most instances data have been presented on 25 cases. In a few instances it has not been possible to determine the tendency as regards a particular personality trait. Usually such a doubtful interpretation has been either omitted or included under the term "unknown" or "doubtful." The designation "normal" or "average" has often been used. This of course represents the author's opinion and is subject to the personal element. It is not attempted to define the normal or average number who show a particular variation from the accepted mean. For example it is not known whether the normal for the ratio of those who are definite to those who are vague in their plans for the future is two to one, one to one, or otherwise. In the discussion such facts will be pointed out as seem to point to normality or away from it, in one direction or another.

#### A. GENERAL INTELLIGENCE, KNOWLEDGE AND JUDGMENT

Intelligence:	Patients
High average .....	11
Average .....	11
Low average .....	3
Learning:	
Easy .....	22
Slow .....	3
Unusual ability in certain subjects:	
Present .....	7
Not obvious .....	18
Attention and concentration:	
Normal .....	22
Below normal .....	3
Education:	
Completed college .....	4
In college .....	3
Completed high school .....	4

	Patients
In high school .....	8
Completed grammar school .....	1
In grammar school .....	1
Type of observer:	
Better than normal .....	2
Normal .....	15
Poor .....	8
Reasoning ability:	
Above normal .....	5
Normal .....	11
Fair only .....	7
Poor .....	2
Type of judgment:	
Quick, impulsive .....	10
Borderline .....	3
Deliberate .....	12
Plans for a career:	
Definite .....	10
Vague .....	15
Foresight in planning:	
Good .....	13
Poor .....	12
Practical:	
Yes .....	15
No .....	10
Type of manager:	
Good .....	6
Average ability .....	8
Fair only .....	4
Poor .....	7
Use of tools or mechanical devices:	
Handy .....	9
Average ability .....	1
Poor .....	6
Clumsy, awkward .....	9

Concerning the traits throwing light on general intelligence, knowledge and judgment, there seemed to be nothing striking. The group of patients in general was of at least average intelligence.

Over half of the series completed college or high school. All except three learned easily. In these three the intellectual level was judged to be somewhat below normal. One-third were poor observers. Three-fifths were vague in their plans for a career, but in spite of this an equal number, three-fifths, were considered to be practical rather than impractical. Attention is called to the fact that there were 13 who showed foresight in planning as compared with 10 who were definite in their plans for a career. In other words, a larger number were more occupied with affairs of the relatively immediate future than with affairs in the more distant future. This may be a usual trait but then again it may not, and serves to emphasize the need for a norm based on similar studies of a large number of relatively normal people. The majority were not handy in the use of tools, tending to be awkward or clumsy. On the whole, as regards the first division, which refers in the broad sense to the intellectual endowment, these patients seemed to average as well as might any group picked at random.

#### B. OUTPUT OF ENERGY

Activity as child in play and work:	Patients
Lively and active .....	15
Sluggish and lazy .....	10
Talkativeness:	
Talkative .....	3
Average .....	5
Fairly quiet or silent .....	6
Type of worker:	
Average energy and activity .....	17
Lazy, sluggish, poor worker.....	7
Deliberate .....	8
Intermediary .....	10
Tendency to overactivity and much tension....	7
Activity by fits and starts:	
Present .....	4
Not prominent .....	21
Interests in athletics, sports, or recreation:	
Wide .....	1
Average .....	11
Limited .....	8
None .....	5

The second division, output of energy, invites attention because of the fact that motor manifestations play such an important part in the catatonic picture. Three-fifths were active and lively in their play and work. Talkativeness was conspicuous by its infrequency, for two-thirds tended to be fairly quiet and silent; of those who were quiet (17 in all) 11 were definitely so. Nearly all were fairly uniform in their level of activity, not tending to show periodic overactivity or explosive outbursts. The distribution of interest in the motor sphere as evidenced by participation in athletics, sports, recreations, hobbies, work and creative activities showed that such expression was average in slightly under one-half and limited in the majority of the cases. In general it seems that the motor manifestations and output of energy were distinctly on the underactive side.

#### C. ATTITUDE TOWARDS ENVIRONMENT

Manner of playing when a child:	Patients
Freely .....	15
Not freely .....	10
Bashfulness before strangers:	
Marked .....	9
Moderate .....	10
Absent .....	6
Sociability or aloofness:	
Sociable .....	8
Borderline .....	6
Aloof .....	11
Selfish or generous and kindhearted:	
Selfish .....	11
Generous and kindhearted .....	14
Tact:	
Tactful .....	17
Tactless and faultfinding .....	8
Stubbornness:	
Quite stubborn .....	7
Moderately stubborn .....	11
Not stubborn .....	7



Trustfulness and suspiciousness:	Patients
Trustful .....	16
Mildly suspicious .....	8
Very suspicious .....	1
Taking offense, imagining slights:	
Easily offended, etc. ....	16
Not easily offended, etc. ....	9
Adaptability to new situations:	
Adapted normally .....	11
Adapted poorly .....	14
Behavior at home and outside:	
More at ease at home .....	3
No difference .....	22
General range of interest:	
Very narrow .....	3
Narrow .....	10
Somewhat narrow .....	8
Average .....	2
Wide .....	2

The third division of the personality deals with the general attitude towards the environment. The ratio of those who were aloof to those who were sociable was two to one. The incidence of bashfulness was even more striking, being three to one. A definite majority played freely during childhood. Some of these, however, showed more restraint and aloofness between the ages of eight and twelve than later. Some played freely but would play alone and would not enter into games to any extent with other children. There was then a very definite number, two fifths of the total group, that did not play freely when children. Approximately two out of three were stubborn, were trustful, were tactful, were easily offended and had a tendency to imagine slights where none was intended.

As regards stubbornness Strecker and Willey<sup>8</sup> reported that "catatonic manifestations during the psychosis may be occasioned by the reappearance of deeply ingrained 'stubbornness' ". All the cases (45) reported by them were women, while those reported here are men. Of the latter, 7 were quite stubborn, 11 moderately stubborn and 7 not stubborn. A slight majority were generous and

kindhearted rather than selfish. A similar number were considered to adapt poorly rather than well to new situations. The general range of interest was wide in two instances and average in two. In two-thirds, or 18 instances, the general range of interests was narrowed to a greater or lesser extent while in an additional three there was practically no outward direction. In short, in their attitude towards their environment the majority were quiet, aloof, stubborn, easily offended, and had very limited outside interests.

#### D. ATTITUDE TOWARD SELF: INNER MENTAL LIFE

Revealing of inner mental life:	Patients
Not self-revealing .....	18
Somewhat self-revealing .....	5
Freely self-revealing .....	1
Frankness and openness, reservedness, reticence:	
Variably self-revealing .....	1
Reticent .....	15
Frank .....	2
Frank with reservations .....	8
Shut-in type of personality:	
Shut in much .....	9
Shut in little .....	9
Not shut in .....	7
Tendency to talk and unburden self:	
Present .....	3
Not present .....	22
Over-conscientiousness and over-scrupulousness:	
Marked .....	12
Moderate .....	8
Absent .....	5
Tendency to shirk, evade and procrastinate:	
Present .....	3
Questionably present .....	4
Absent .....	18
Honesty and truthfulness:	
Marked .....	22
Average .....	3

Egotism, vanity, pride:	Patients
Quite apparent .....	7
Not apparent .....	15
Unknown or doubtful .....	3
Self-reliance:	
Self-reliant .....	12
Not self-reliant .....	13
Leadership:	
A leader .....	8
Inclined to be led .....	17
Assertiveness and submissiveness:	
Self-assertive .....	8
Submissive .....	16
Unknown .....	1
Courageousness and cowardice:	
Courageous .....	10
Cowardly .....	5
Neither .....	10
Demonstrativeness:	
Demonstrative .....	3
Not demonstrative .....	19
Affectionate or cold:	
Affectionate .....	8
Cold .....	14
Number of friends:	
Average or fair number .....	6
A few .....	12
None .....	7
Qualities in others that were attractive:	
Similar interests .....	13
None apparent .....	10
Good physique .....	1
Strength of family attachments:	
Strong .....	19
Slight .....	5
Not apparent .....	1

Familial attachments and antagonisms:		Patients
Strong attachment to mother .....	18	18
Slight attachment to mother .....	3	3
Strong attachment to brother .....	1	1
Strong hostility to mother .....	1	1
Strong hostility to brother .....	1	1

In this division, namely, attitude towards one's self, certain findings were clear-cut. Nearly all, or six to seven out of eight, were over-conscientious, industrious, honest, truthful, undemonstrative, lacking in egotism, had few or no friends, and had strong family attachments, particularly to the mother. Approximately two-thirds were submissive and inclined to be led. Those who were of average self-reliance and courage and those who were lacking in these qualities were evenly divided.

The shut-in personality was present in 18 or 72 per cent of the 25 cases. Nine of these were considered to have been shut-in to a considerable extent and 9 were only moderately shut-in. This percentage is slightly larger than that obtained by Hoch<sup>9</sup> of 60 per cent, by Kirby and by Hoffmann<sup>10</sup> in the study of the pre-psychotic personality in dementia præcox. Hoch stated that he found a definite correlation between the more marked shut-in types and the subsequent intensity of deterioration in dementia præcox. Hoffmann, who used Kretschmer's classification, found that the more schizoid the pre-psychotic personality, the clearer and purer did the psychotic symptomatology appear. For purposes of clarity, the traits upon which Hoch would lay most emphasis in the shut-in personality are: "The lack of contact with the environment, the satisfaction with fancies instead of objective interests, the lack of constructive aims and aggressiveness."

#### E. ATTITUDE TOWARDS REALITY

	Patients
Matter of fact, unimaginative .....	14
Over-imaginative, visionary, day dreaming.....	11
Satisfaction with things as they are:	
Considerably dissatisfied .....	4
Somewhat dissatisfied .....	4
Not dissatisfied .....	17

Interest in occult, abstract, or mystic subjects:	Patients
Slight .....	4
None .....	21
Superstitiousness:	
Present .....	5
Absent .....	20
Religious interests:	
Marked .....	5
Moderate .....	4
Passive .....	3
None .....	13
Type of thinking:	
Quite logical and orderly .....	6
Average .....	11
Not very logical or orderly .....	9

The fifth division deals with the attitude towards reality. Two out of three were matter-of-fact, unimaginative, satisfied with the existing order of things, and fairly logical and orderly in their type of thinking. Superstition and interest in occult, abstract or mystic subjects were occasionally present. The presence of unusual interest in and preoccupation concerning religious affairs was likewise occasionally present. An appreciable number showed moderate or passive religious interest, and one-half showed no interest at all in religious affairs.

#### F. MOOD: EMOTIONAL REACTION

Lability of mood:	Patients
Placid, even tempered, phlegmatic .....	16
Changeability, periods of buoyancy and despondency .....	4
Borderline as regards placidity and changeability of mood .....	5
Quality of mood:	
Cheerful, light-hearted, optimistic .....	13
Gloomy, pessimistic, worrisome .....	5
Borderline as regards cheerfulness and gloominess, etc. ....	7

<b>Irritability:</b>		<b>Patients</b>
Easily angered .....	9	
Not easily angered .....	16	
<b>Tendency to brooding:</b>		
Present .....	11	
Absent .....	13	
Unknown .....	1	
<b>Reaction to things that frighten:</b>		
Frightened easily .....	6	
Frightened with difficulty .....	17	
Reaction unknown .....	2	
<b>Sensitiveness:</b>		
Sensitive, touchy, grumbling, faultfinding .....	10	
Not sensitive, etc. ....	12	
Slightly sensitive, etc. ....	3	
<b>Reaction to failures:</b>		
Good .....	15	
Poor .....	9	

The findings under the sixth heading, mood, emotional reactions, seem to point to a lack of the usual affective reactions to situations. In a survey of the accompanying table it can be seen that approximately two-thirds or more were placid, even-tempered, phlegmatic, cheerful, light-hearted, optimistic, were not irritable, showed little or no tendency to brood, bore disappointments adequately and were not frightened easily. Sensitiveness, as evidenced by touchiness, grumbling and faultfinding was noticeably present in two-fifths of the cases. This incidence seems rather large in view of the other findings bearing on the mood and the emotional reactions.

#### G. SEXUAL INSTINCTS

<b>Frankness concerning sexual matters:</b>		<b>Patients</b>
Frank .....	4	
Secretive .....	21	
<b>Shyness before opposite sex:</b>		
At ease .....	7	
Shy .....	18	



Number of known love affairs:		Patients
None .....	18	
One .....	6	
More than one .....	1	
Superficial affairs .....	3	
Modesty and prudishness:		
Excessive .....	3	
Moderately exaggerated .....	10	
Not obvious .....	12	
Special demands as regards neatness, cleanliness, and tendency towards moralizing:		
Excessive .....	3	
Moderately exaggerated .....	11	
Not abnormal .....	12	
Intolerance for and disgust at sexual topics:		
Obvious .....	9	
Not obvious .....	14	

Information concerning sexual instincts was difficult to obtain and usually untrustworthy. This was due to the lack of information on the part of informants and to the inaccessibility of the catatonic group as a whole.

Hoch<sup>9</sup> gave three reasons for agreeing with Abraham's claim that in schizophrenia there is a fundamental lack of sexual adaptability. In the first place there is a close relationship between schizophrenia and puberty. In the second place there is the frequency with which sexual conflicts are found to play a role in the development of the psychosis. In the third place analysis of the content of the psychosis has shown again and again the existence of sexual trends, and when the sexuality manifests itself it does so in a peculiarly diffuse, poorly adapted manner. Abraham<sup>11</sup> stated that the lack of sexual adaptability was due to an arrest of sexual development, a permanent retention of the infantile autoerotic stage, and he looked upon the shut-in tendency as one of the expressions of autoerotism.

The impression that there is a fundamental lack of sexual adaptability is given support by the finding in this group. All were unmarried. Modesty and prudishness beyond the average were found

in one-half. A similar number were especially neat and clean, and showed a tendency towards moralizing. Two-fifths showed intolerance and disgust at sexual topics. Four-fifths were secretive about sexual matters. Nearly three-fourths were shy in the presence of the opposite sex. Three out of four gave no history of a love affair and with a single exception the other love affairs were limited to one. These were six in number and in three of these the love affairs were of a superficial character.

## H. FEELING OF INFERIORITY

Self-depreciation :	Patients
Present .....	5
Absent .....	16
Slight .....	3
Humility :	
Present .....	9
Absent .....	16
Social deference :	
Present .....	16
Absent .....	4
Sensitiveness :	
Present .....	13
Absent .....	12
Seclusiveness :	
Marked .....	9
Absent .....	7
Slight .....	9
Dissatisfaction :	
Present .....	5
Absent .....	16
Slight .....	4
Jealousy :	
Present .....	5
Absent .....	20
Critical tendency :	
Present .....	5
Absent .....	18
Slight .....	2

Stubbornness:	Patients
Considerable .....	9
Absent .....	13
Slight .....	3
Cowardice:	
Marked .....	5
Absent .....	19
Moderate .....	1

The criteria for forming an estimate of feelings of inferiority which were quite frequent were social deference and seclusiveness. The following criteria were much more often absent than present: self-depreciation, dissatisfaction, jealousy, tendency to criticize, and cowardice. If one accepts these traits as criteria it would seem that feelings of inferiority were present to a normal extent but not to an unusual degree.

#### SUMMARY

This study of the pre-psychotic personality of 25 male persons suffering from the catatonic form of dementia præcox brings out the following points:

- (1) The intellectual and physical endowment seemed average.
- (2) The motor manifestations and output of energy were below that usually considered normal for childhood and early adolescence.
- (3) In their relations to the environment the majority were quiet, aloof, stubborn, easily offended and had a limited range of interests.
- (4) Almost invariably they were reticent, non-self-revealing, over-conscientious and had few or no friends. A majority were passive and submissive. Seventy-two per cent presented the partially or totally shut-in personality.
- (5) The emotional reaction seemed to be somewhat inadequate.
- (6) In the great majority of cases there was a lack of sexual adaptability.

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## PRE-PSYCHOTIC PERSONALITY OF CATATONIC SCHIZOPHRENICS

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The following study was undertaken in the belief that the pre-psychotic personality might shed some light upon those features, which distinguish the catatonic from the other forms of dementia præcox. I refer particularly to the possible elements in the personality among catatonics, which may explain their reputedly more frequent recoveries and remissions, be they by a process of "synthesis" or of "encapsulation." It too would seem feasible that the reported results obtained in this group alone, with sodium amytal, would argue for a peculiar constitutional make-up, as described by Hoch<sup>1</sup>, apart from the pharmacology involved. In this connection it might be noted on the other hand, that although tuberculosis is frequent among catatonics, the tuberculo-toxins produce here, no such excitation of the mental processes, nor the euphoria and euthanasia as observed by Fishberg<sup>2</sup> among the non-psychotic. It may be that light can be thrown also, by this study, upon a possible relationship between the respective personality types on the one hand, and the superficial resemblance in their phases of the catatonic and the manic-depressive reactions on the other. Finally, any pathognomonic personality traits so revealed are of interest, especially from the standpoint of the mental hygienist.

The method followed included the investigation of 35 carefully selected cases of dementia præcox of the catatonic type, who were admitted to the Utica State Hospital during the years of 1919 and 1931 inclusive. It is to be noted, however, that in one case, the first admission occurred in 1897. The material is admittedly small, but only those cases were selected in which reasonably adequate personality studies could be obtained, and in which the usual diagnostic criteria could be satisfied. For the former a questionnaire was devised, derived in part from Hoch and Amsden,<sup>3</sup> and in part from Bowman and Raymond,<sup>4</sup> who in turn had modified the list of traits drawn up by Wells. The social service department\* thereupon made full investigations in these cases, charting the traits as de-

\* The writer is much indebted to the social service department of the hospital for this fundamental information, without which, no such study could be undertaken.

scribed, and frequently inserting illustrative remarks by relatives and intimates. Unless a spontaneous, objective description of certain traits was obtained such were recorded as unascertained or questionable depending upon other evidence. Then the psychiatrist and the individual worker went over the material in detail, together. Recourse was had to the hospital record, which as Amsden<sup>5</sup> aptly remarks, often confirms pre-psychotic traits. Scrupulous care was taken however, to exclude actual psychotic manifestations. An abstracted schema of the definite tendencies was prepared, consisting of 38 headings with 51 minor points upon which all cases were coded. This form follows:

1. Infantile oral difficulties
  - a. Feeding difficulties
  - b. Nipple biting
  - c. Teething difficulties
2. Neurotic habits
  - a. Enuresis
  - b. Nailbiting
  - c. Nosepicking
  - d. Persistent thumbsucking
  - e. Speech abnormalities
  - f. "Finicky" regarding food
  - g. Pavor nocturnus
  - h. Temper tantrums
  - i. Convulsions or fainting attacks
3. Model child
4. Interfamily relationships
  - a. Unadjusted Edipus situation
  - b. Unadjusted electra situation
  - c. Overdependence upon mother
  - d. Resentments toward members of same sex
5. Child sex habits
6. Adolescent and adult friendships
  - a. Homosexual
    - Close
    - Many
  - b. Heterosexual
    - Close
    - Many



7. Reaction to social group
8. Jealousy
9. Sympathy
10. Conflict with law
11. Sportsmanship
12. Recreations
  - a. Group
  - b. Lone
13. Treatment by associates
14. Self-assertiveness
  - a. Bashful
15. Sensitivity
16. Communicativeness
17. Sense of humor
18. Self-sufficiency
  - a. Seclusiveness
  - b. Sense of isolation
  - c. Sense of insufficiency
19. Estimate of self
  - a. Narcissism
  - b. Conviction of failure
  - c. Sense of guilt
  - d. Feelings of inferiority
  - e. Masochism
20. Ability to bear pain and illness
21. Daydreaming
22. Absentmindedness
23. Reversal of sleep rhythm
24. Output of energy
25. Initiative
26. Ambition
27. Adaptability
28. Childhood, adolescent and adult mood
  - a. Capriciousness
  - b. Moodiness
  - c. Irritability
  - d. Stubbornness
  - e. Apprehension
  - f. Colorlessness

29. Bigoted
  - a. Narrowness
  - b. Onesidedness
  - c. Inflexibility
30. Church attendance:
  - a. Over-religiosity
31. Adolescent or adult auto-erotism:
  - a. Oral
    - (a) Smoking
    - (b) Drinking
    - (c) Other
  - a. Hypochondriasis
  - b. Masturbation
  - c. Anal
    - (a) Cruelty
    - (b) Excessive neatness
    - (c) Collecting
    - (d) Parsimony
    - (e) Obstinacy
    - (f) Other
32. Intelligence
  - a. School record
33. Work ability
34. Adolescent and adult sex habits
35. Activity of sex life
36. Degree of sex satisfaction
37. Harmony of sex life
38. General marital adjustment

Finally the material was contrasted in a study of the basic features as classified under 73 headings, and comparisons drawn. No reference to outcome in any case was made until all had been classified. In this connection Hoch<sup>3</sup> has stated that probably it will be always impossible to devise such a test and when devised its artificiality would be patent. Hendrick<sup>6</sup> after critically surveying 147 papers dealing with personality tests rejects all as unsatisfactory. The writer feels likewise relative to his method. Parenthetically it may be remarked that statistical results as derived from the limited material at hand are also obviously fallacious. However any

general indications relative to pre-psychotic personality have some value.

The writer proposes to discuss only a few of the more frequently-found factors, and traits.

As noted above this study is concerned with 35 cases, of whom 10 subsequently made an adjustment. In this paper that term implies social adjustment outside the hospital. Their average age on first admission was 29, the youngest being 16 and the oldest 54 years respectively. Twenty-one were females and 14 males.

Their intellectual capacity first attracts attention. Krapelin<sup>7</sup> referred to his own cases and quoted the conclusions of others to the effect that degree of intelligence is not a significant etiological factor in dementia præcox. In the group examined, 13 were of good, 17 of average, 4 of questionable and 1 of low intellectual capacity. It is interesting to note that of the first 13, only 2 made a satisfactory adjustment. Although defectives fall prey to characteristic dementia præcox, Myerson<sup>8</sup> notes, that among the feeble-minded, it is not infrequently that one finds catatonic reactions. Two of our typical cases, one an imbecile, the other a moron, were excluded from this series because of the difficulty in securing a clear-cut personality study—and further, the second appeared to be such as Myerson describes. The case which was included, proved later upon analysis, to show the typical personality make-up. Frequently associated in our minds with the temper tantrums of mental deficiency is stubbornness. Making no reference to mental defect, Strecker and Willey<sup>9</sup> call attention to stubbornness as a reaction pattern ingrained in the child, who later develops catatonic schizophrenia when forced to face concrete difficulties. This they found in 3 cases of catatonia. In the group presented by the writer it was seen in 11 cases, of whom only 2 adjusted. Closely associated are narrowness, one-sidedness and inflexibility, which traits occurred, respectively, in only 13, 15 and 9 cases. Amsden<sup>5</sup> in his study which included 11 catatonics, on the contrary, divides the catatonic pre-psychotic personality types equally between the "inflexible paranoid type" and a group showing dreaminess, bashfulness, and fearfulness. Five of our series, however, classified as bigoted, failed to adjust. Further, Strauss,<sup>10</sup> quoting Mauz also

stresses the inflexible traits, relating them to early negativism, and adds that the group as a whole does not fall into clearly defined categories. To these he adds that type of personality perhaps best described, simply as "colorless," together with those displaying lack of adaptability, moodiness, and irritability. The latter occurred in 16 of our cases, of whom but 5 made an adjustment. Colorlessness prevailed in the same number, of whom only 5 again adjusted. Lack of adaptability may also be considered at this point, and is too, actually a commonly-found trait. It was found in 23 cases of the 35 studied, among which it was marked in 1 case, and the evidence was considered questionable in another two. However of this 23, 8 made a satisfactory adjustment, and it may be noted again that—of the entire group of 35, but 10 were felt to have done so. Moodiness, so-called, occurred in 14 cases, and fearfulness to which Amsden<sup>5</sup> called attention, in 4 only. Finally Strauss<sup>10</sup> declares that the oversensitivity of the pre-hebephrenic is lacking in the catatonic group. This the writer was unable to substantiate. Indeed of the 35 individuals studied, but 4 lacked this quality. Among those so characterized, the trait was marked in 16; and of the 31, failure to adjust was noted in 24. Bowman and Raymond<sup>4</sup> in this particular, state that it was found in 22 of their 50 cases of unclassified schizophrenia during childhood and in 23 cases during the adult period.

So far as the time-honored "shut-in" personality as described by Hoch<sup>11</sup> and,<sup>12</sup> and the obvious incomplete psychosexual development of the schizophrenic are concerned, considerable may be said, in evaluating the pre-psychotic personality, as an etiological factor. The acme of introversion is of course seen in stupor and a vivid illustration of psychosexual regression was afforded by one of the writer's patients, who, when tube-feeding became mechanically impossible, gurgled contentedly over an infant's feeding bottle. Seclusiveness was found by Hoch<sup>11, 12</sup> in from 50 to 60 per cent of his cases of unclassified dementia præcox. Bond's,<sup>13</sup> and those of Bowman and Raymond,<sup>4</sup> were confirmatory of his results. In this connection Strecker and Willey<sup>14</sup> warn one to distinguish "between a constitutional seclusive make-up and one in which withdrawal from socialization constitutes \* \* \* a somewhat logical de-

fense and protection against definitely inimical surroundings." As is obvious, a definite attempt was made to follow their lead, but the difficulties in evaluating all these intangible personality traits and environmental factors are manifold.

However, in but 2 cases of our series of 35, was the reaction to the social group, approximately "normal"—and both of these, because of questionable characterization, were accordingly so classified. Eighteen were definitely bashful and of these, 5 adjusted. Of 17 described as seclusive, the trait was prominent in 6, and but 3 later made an adjustment. A sense of humor was reported lacking in 13 cases. Twenty-one were revealed to be under-communicative, of whom 6, so characterized, later made an adjustment. Kræpelin<sup>7</sup> beside observing these seclusive tendencies, made reference to capriciousness which was found in 9 of the 35 cases studied. As noted above, 23 of the group lacked adaptability, and a similar lack as regards initiative and ambition was found in 16, and 11 cases, respectively. Conflict with the law occurred in but 3 of the series of 35. Two were boys, guilty of malicious mischief and the third had been a sexually delinquent, adolescent girl. This confirms the findings of Healy, Clarke and Kasanin,<sup>15</sup> relative to the incidence of criminal tendencies among their so-called psychotoid personality types. Contrasted to the study of Bowman and Raymond,<sup>4</sup> work ability was somewhat less among this group of pre-catatonics, in that, 7 displayed poor work records. Strangely enough, more than half were charted as showing a high output of energy—22 in number, of whom 8 later adjusted. Among a part of the 22, energy was definitely spasmodic, and this circumstance will be dealt with later. The sleep rhythm prior to the psychosis, was disturbed in only 5 cases.

A tendency toward over-sympathy was found in 19 of the series, of whom it is reported 6 later adjusted. This contrasts with the generally expressed opinion as remarked upon by Harrowes.<sup>16</sup> Jealousy occurred in 10 cases although satisfactory information could not be had in 5 others.

In explaining the acknowledged abnormal reaction to the group, Boisen<sup>17</sup> states that catatonia develops as the result of an experience which compels a reorganization of the individual's world, or

his mode of thought and judgment. This most often, is dependent upon a pre-existing, unbearable sense of personal failure as judged by the individual's own standards. Associated, there is often a feeling of isolation or sense of guilt. Kempton,<sup>18</sup> thus, in a social survey of 40 cases of catatonia develops these features, and traces the conviction of failure in 23 to maladjustments in the social, sexual and occupational field; in 12 to maladjustment in the social and sexual fields. In 2 she found the failure to be primarily social. In 17 a sense of guilt was marked, and resulted chiefly from defective psychosexual development. The sense of isolation appeared to be dependent upon the two foregoing qualities. In the writer's group of 35 cases, evidence of a pre-psychotic sense of isolation was adduced in 9, of whom 5 failed to adjust; of a sense of insufficiency in 25, of whom 18 failed to adjust; and there were 4 cases in which a conviction of failure had manifested itself. Associated with these are the often-described feelings of inferiority, which here were elicited in 17 cases, of whom 12 made no subsequent adjustment. The possibly related over-religiosity, was found in 5 cases, together with 18 displaying a sense of guilt, among the latter of whom 7 adjusted.

An attempt to relate early oral difficulties to autism as suggested by Hendrick<sup>19</sup> failed chiefly by reason of inability to obtain proper information—the postulated relationship being demonstrable in but 3 cases. Of the 15 cases in which definite data were secured, marked oral difficulties were encountered in 1, and in 6, to a lesser degree. Day-dreaming was prominent, and occurred in 20 cases; of these, 4 later made an adjustment. Absentmindedness was shown to be present in 13 cases. In reference to evidences of pre-psychotic oral erotism positive findings were charted in 22 cases. Of these, 4 were questionable, and 7 marked; of the latter 5 are reported to have adjusted; and among the remaining 11, there were 2 further adjustments. Thus, the prognosis was good among those showing definite evidence of oral erotism. May not this reveal some relationship to the oral erotism of the manic personality type as discussed by Coriat?<sup>20</sup>

Neurotic habits during childhood were encountered in 14 cases, of whom 6 later made satisfactory adjustments. Definite evidence



of the edipus or electra situation was found present in 25 cases. In these 10 adjustments, the total number for the series, are recorded. Seventeen of the group were described as being "model children," among whom 10 adjusted. Parenthetically it may be remarked, that oddly enough, there were siblings in each of the 35 cases. Inflated narcissism was either recorded as present, or marked in 28 cases, of whom 8 made an adjustment. Thus, narcissism is a prominent personality trait. Overdependence upon the mother was found in 19 of the studies. Among these, there were listed 5 satisfactory adjustments.

A total of 18 cases were determined in which only friendships with the same sex, occurred during adolescent and adult life. Of these, those who showed strong homosexual strivings, to the number of 7, all but one are reported to have adjusted. The remainder included 2 cases who also made a satisfactory adjustment. Therefore, it seems probable that fixation at the homosexual psychosexual level is both an etiological and reconstructive factor, although it is obvious that the subsequent adjustments made, must have taken place at that level—which, upon investigation, was found to be the correct assumption. Generally speaking, 11 cases presented gross evidences of pre-psychotic psychosexual arrest at the infantile level. Of these none adjusted. The usual hypochondriasis, betraying their kinship to hebephrenia, was displayed definitely by 15 cases, among whom 12 failed to adjust.

Most interesting of all is the large number of patients who showed definitely what are held to be anal-erotic traits prior to their psychosis. Coriat<sup>20</sup> in discussing Kretschmer's character types relates the schizophrenic negativism to this trait. Many were excessively neat and aggressively cleanly, in our series. A housekeeper "could not see a pin out of place," another was "painfully neat," and again one seemed, "much too fussy for a boy"—as described in the words of the various informants. A man showing some of these features was also a gardener by occupation. A smaller number were preoccupied with constipation and related functions, and as noted above, the spasmodic dispersion of considerable energy was found fairly frequently. Parsimony was a very common trait, rather often yielding to generosity with the advent

of the psychosis. Obstinacy or stubbornness is held to another trait found in Freud's "anal-erotic character" and has been referred to above. Accordingly upon analysis, 29 of the 35 cases, showed anal-erotic traits. Among the 19 in whom it was marked, there were recorded but 3 adjustments. In 3, concerning whom the evidence was questionable, and among the remainder—there were recorded 7 further adjustments. Thus, to recapitulate, anal erotism was found in the vast majority of cases, and when but moderately conspicuous is not an unfavorable sign. Masochism was encountered in 5 cases only.

Investigation of the sex life in such a study is manifestly unsatisfactory of course, chiefly because of inability to secure adequate information. Bowman and Raymond<sup>4</sup> experienced this difficulty and the writer also makes no pretence of offering full or correct data. However, it has long been accepted generally that it is in this field that most of the maladjustment of the schizophrenic occurs, and such were the findings of Kempton<sup>18</sup> among catatonics as referred to above. In this connection Sullivan<sup>21</sup> makes the following broad statement: "I have come to believe that in peace times no one becomes schizophrenic who has achieved a really satisfactory sexual integration with another person of comparable status." In our study, 23 of the 35 cases, were single, and 12 married. Of this latter group, 9 most obviously were poorly adjusted in their marital life. Of the 3 said to be apparently happily married, one was the mother of 10 children, which, after all, in itself, is not conclusive evidence. Little or no adolescent and adult heterosexual interest was evinced in 28 individuals—and masturbation during the same life period in the 20, concerning whom reliable information could be obtained, occurred in 9. The writer realizes that figures relative to the activity of sex life, and its discordancy are even more unreliable. However, in view of what has been noted above, relative to factors resulting from faulty psychosexual development, the following is probably an understatement: 22 patients, among 29 about whom pertinent information could be secured, showed little activity of sex life; and of 31 concerning whom a proper opinion could be

formulated, only 1 apparently enjoyed a pre-psychotic, harmonious sex life. Roughly the above coincides with the findings of Bowman and Raymond.<sup>4</sup>

To sum up these factors, presented thus in an artificial light, torn apart from the life situation and back-ground of the individuals concerned—a composite portrait of the average catatonic pre-psychotic personality, might be drawn by mentioning the more important traits in their order of incidence. Over-sensitivity is of most general distribution, occurring in 31 cases of the 35. Anal-erotism came next, having been found in 29. Display of narcissism then came in point of frequency, namely in 28 cases. Fourthly showing themselves among 25 individuals, were the following: feelings of insufficiency and the edipus or electra situation, and in 23, lack of adaptability. Under-communicativeness was seen in 21 cases, and autism in 20. Over-dependence upon the mother and over-sympathy were noted in 19 cases. Evidences of homosexuality, oral erotism, feelings of guilt and bashfulness were each found in 18. Lastly there will be mentioned again seclusiveness, and feelings of inferiority both occurring in 17 cases.

Thus the constellation of associated malignant traits seems to include: marked anal erotism, hypochondriasis, inflexibility, stubbornness, seclusiveness, bigotry, irritability, and that general type of personality labelled "colorless," together with those individuals palpably infantile in reaction. On the contrary those patients showing but moderate evidence of anal erotism, marked oral erotism, narcissism, and definite homosexual strivings seemed to do better. Lastly, model children and those with an unadjusted edipus or electra situation, appeared to fall into this category as well.

A few of these factors may be tabulated as follows:

THE INCIDENCE OF CERTAIN PRE-PSYCHOTIC PERSONALITY TRAITS AMONG 35 CASES OF  
CATATONIC DEMENTIA PRÆCOX

Trait or tendency	Cases showing subsequent adjustment	Cases showing no adjustment, dying or deported	Cases in which the evidence was questionable or unascertained
Seclusiveness	3	14	..
Under-communicativeness	6	15	..
Bashfulness	5	13	1
Lacking sense of humor	5	8	2
Oversensitivity	7	24	1
Oversympathy	6	13	1
Autism	4	16	4
Absentmindedness	4	9	1
Jealousy	4	6	6
Moodiness	2	12	..
Capriciousness	4	5	..
Irritability	5	11	..
"Colorlessness"	5	11	..
"Over-religiosity"	2	3	1
Poor sportsmanship	2	11	2
Apprehension	2	2	2
Stubbornness	2	9	..
Bigotry	..	5	..
Inflexibility	1	8	..
Narrowness	4	9	..
One-sidedness	6	9	..
Lack of adaptability	8	15	2

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THE INCIDENCE OF CERTAIN PRE-PSYCHOTIC PERSONALITY TRAITS AMONG 35 CASES OF CATATONIC DEMENTIA PRÆCOX—Continued

Trait or tendency	Cases showing subsequent adjustment	Cases showing no adjustment, dying or deported	Cases in which the evidence was questionable or unascertained
Lack of initiative	5	11	1
Lack of ambition	5	6	1
Lack of work ability	3	4	..
High output of energy	8	14	..
Conviction of failure	1	3	..
Conviction of guilt	7	11	..
Sense of isolation	4	5	..
Sense of insufficiency	7	18	..
Sense of inferiority	5	12	..
Overdependence upon mother	5	14	..
Unadjusted edipus or electra situation	10	15	2
Infantilism	..	11	..
Hypochondriasis	3	12	3
Oral erotism	7	11	4
Anal erotism	10	19	3
Masochism	1	4	..
Inflated narcissism	8	20	1
Homosexual tendencies	8	10	1
Abnormal sex habits	7	4	5
Little activity of sex life	8	14	9
Disharmony of sex life	10	20	4
Little heterosexual interest	9	19	1

In conclusion the writer feels that a similar, fuller, and continued study, carried on with newly-admitted cases over the necessary length of time, would produce more accurate results than those presented here. Further the expansion of such a study along the lines of the synthetic approach as advocated by Kretschmer,<sup>22</sup> which includes an investigation of the constitutional make-up, personality, physical disorders and all exogenous influences—would of course be ideal in the analysis of catatonic schizophrenia. Indeed a modification of his entire scheme could be employed with value, in such a study, and only then might all the etiological factors be determined. From the standpoint of mental hygiene, and after-care, certain traits have been emphasized above. However, Plant<sup>23</sup> some few years ago pointed out that while we are trying to integrate personality, the "total condition of social life is essentially analytical," and counselled that we concern ourselves less with those who have failed, and attack the social institutions, fostering only those with synthetizing influences. In this connection Kempton<sup>18</sup> referred to Mead's<sup>24</sup> anthropological studies in Samoa. There, this avowed amateur psychiatrist recognized the factors in that civilization producing stable, well-adjusted and robust individuals. These, she believed, included the peculiar organization of the family, the attitude toward sex, the general educational concept which blurs individual differences, and the slower pace dictated by the climate—all making for "the painless development from childhood." Thus she found extant, and in the memory of a population of 2,000, but 8 psychotics, including one showing catatonic manifestations. The practical implication is obvious, relative to the institution of the widely-advocated methods of child guidance, all directed against the unfavorable personality traits discussed in this paper.

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## THE USE OF SODIUM AMYTAL, SODIUM RHODONATE AND SODIUM BARBITAL IN THE CONTROL OR TREATMENT OF THE PSYCHOSES

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Great advances have been made in the field of psychiatry during the past 25 years. The impetus in this direction was started by Kräpelin who can truly be said to have been a master of descriptive psychiatry. The fact that our present system of classification is based on the work of this one man is certainly a great tribute to his keen sense of observation. To simply observe symptoms and catalogue them is, however, of little benefit to our patient who is the prime interest.

Whether pathological changes occur in all psychoses or not is a problem which to date has not been definitely ascertained. All we can say is that in the so-called functional group no consistent brain pathology has been demonstrated. There is, however, certain evidence that metabolic changes are present in all psychoses.<sup>1</sup> In the functional group it has not been determined whether these are cause or effect.

We are still in the experimental stage as regards therapy and no suggestion should be overlooked that offers a possible field for investigation. In the present report we are concerned only with the pharmoco-therapeutic approach by the use of sodium bromide, sodium amytal, sodium barbitol and sodium rhodonate. The literature on this subject was recently surveyed by Hinsie.<sup>2</sup> Following the work of Wright<sup>3</sup> we became interested in the use of massive doses of sodium bromide and have carried out this form of therapy at the Marcy State Hospital since June, 1926. Our observation of results from this form of treatment are, we believe, worthy of mention.

Our original series consisted of 129 cases and at the end of a three-year observation period, that is, in June, 1929, our results were as follows: 25 much improved, 51 improved, 21 slightly im-

proved, 25 unimproved, 7 died. Of these deaths only one, it was felt, could in any way be connected with the therapy. This case died of bronchopneumonia four days after the discontinuance of bromide. The status of this series of treated cases on April 1, 1932, is as follows: 35 much improved, 41 improved, 22 slightly improved, 15 unimproved, 16 died. Of the 129 cases only 10 have received any bromide since the previous report.

All cases in the much improved group are actively employed about the hospital in various occupations and industries of a productive nature. In the improved group all are actively employed but on a somewhat limited scale. The slightly improved group show improvement mostly in their behavior disorders. All these groups were non-productive prior to treatment and constituted a problem on the wards. We appreciate the efforts put forward by the occupational therapy department, however, we feel from previous observation of these patients that these results could not have been accomplished had not the mental conflict been lessened and the regressive drive in some way prevented. How else are we to explain this restoration to a higher level? Where occupation best fits, we believe, is in the maintaining of this higher level. This may account for the greater number of improved cases shown in our recent survey.

From the recent reports of Bleckwenn,<sup>4</sup> Loevenhart, Lorenz and Waters<sup>5</sup> in the use of sodium amytal in psychotic cases, they demonstrated that in certain of these rest was produced, in others stimulation occurred. Bancroft and Rutzler,<sup>6</sup> Lang and Paterson<sup>7</sup> reported similar results in response to sodium thiocyanate (rhodionate). Having carefully studied these reports we felt that further clinical study would be of value. We were not concerned with the theories of the action of these drugs, but only as to possible therapeutic results.

Sodium bromide has already been considered. We now come to observations on the use of sodium amytal, sodium rhodionate, and prolonged sedation by the use of a combination of sodium amytal and sodium barbitol. Due to the reported opposing action of sodium amytal and sodium rhodionate, both drugs were tried in most cases and the one from which benefit was derived was con-

tinued. This was the only means of procedure we could adopt as there is no yardstick by which the effects of these drugs can be measured, nor can we judge beforehand which will be beneficial in any specified case.

The following are our results in a group of our most deteriorated cases. To date many of these cases are still under treatment. All were problem cases showing one or more of the following tendencies, such as: negativism, assaultive tendencies, destructiveness, depressive episodes, marked agitation, impulsive acts, habit disorders, apathy and indifference, and overactivity with mischievousness. Of the 67 cases treated with sodium rhodionate, 3 were much improved, 17 improved, 3 slightly improved, 34 unimproved, and 10 worse. Of the 14 cases treated with sodium amytal, 4 were improved, 3 slightly improved, and 7 unimproved. Of the 31 cases treated with sodium barbital, 15 were improved, 6 slightly improved, and 10 unimproved. We appreciate that the unimproved cases and those made worse should have been checked with the opposing drug in order that we might thoroughly check the theory of the opposing action. However, with the exception of the cases cited our studies have not yet progressed for a sufficient length of time to make this cross check possible. Four cases of this group are reported.

Case (R. P.). Age 38. Diagnosis, dementia praecox, hebephrenic. Psychotic features had been present for 13 years prior to treatment. She displayed many mannerisms but cared for herself and was tidy in habits. She was overactive, talked almost constantly, was restless at night and slept poorly. On November 7, 1931, she was started on sodium rhodionate and received 30 to 35 grains daily from then until December 9, without any apparent improvement. No toxic symptoms were, however, noted during the course of treatment. On December 17, she was placed on sodium amytal, 6 grains daily, and received this until January 12, 1932. She became quiet, less active, talked a little English, and appeared in better contact. From January 19 to March 26 she received sodium barbital, 10 to 15 grains daily. She continued less restless and active, did not talk so much and was more agreeable, did more polishing on the ward and also some light ward work.

Case (C. V. A.). Age 48. Diagnosis, dementia præcox, paranoid. Psychotic features had been present for over 4 years prior to treatment. She was overactive, had frequent crying and screaming spells, was quarrelsome, destructive, at times broke windows and interfered with other patients. She was noisy and restless at night, particularly in response to hallucinations. On November 6, 1931, she was started on sodium rhodolate. This was increased so that by the end of the month she was receiving 45 grains daily. On November 30 this was discontinued as she became agreeable, slept well, was less hallucinated, assisted with work on the ward, was more efficient, conversed more rationally, and took some interest in her surroundings. She was also more tidy in her personal appearance. She remained in this more comfortable condition without rhodolate until December 17, when she again became upset. From that date to January 4 she required 10 to 40 grains daily and again became more quiet and agreeable. From January 16 to February 14 she required 5 to 30 grains daily and the same for a similar period the latter part of February and early in March. Her disturbed periods appear shortened and smaller doses of rhodolate are required.

Case (P. B.). Age 48. Diagnosis, dementia præcox, hebephrenic. Psychotic features had been present for over 9 years prior to present treatment. She had been receiving small doses of sodium bromide for a considerable period. On this she was slightly improved but easily showed bromide intoxication. For this reason it was discontinued on November 10, 1931. At that time she was overactive, interfered with the other patients, got into many altercations, was hallucinated, untidy, restless at night, and her conversation showed much scattering. On the discontinuance of bromide, sodium rhodolate was given, at first 15 grains daily. This was increased so that by the first of December she was receiving 45 grains daily. Under this treatment her condition steadily became worse. She was extremely overactive, talked constantly, made fantastic motions, and gave obscene demonstrations. She was restless and noisy at night. From December 4 to 14 she received 20 grains sodium barbitol daily. Her condition improved. She became quiet, tidy, and did considerable work on the ward. She remained im-



proved until January 20 without treatment, but was again gradually becoming more upset. She was given sodium amytal, 6 grains, on January 26. This was continued daily till February 9. Patient was still disturbed and sodium amytal was increased to 12 grains daily. She received this amount until February 16, but this had little effect. It was then increased to 18 grains daily on February 18. At this time she slept for 36 hours, being awakened for meals and general nursing care, and remained quiet. Following this prolonged period of sleep she was very much improved as to mental content and general behavior. She was continued on 6 grains daily until March 1. She continued comfortable, conversed better and was also doing considerable ward work. From March 1 to 29 she was carried on 10 grains of sodium barbital daily and continued in an improved condition. This case illustrates the opposing action of sodium amytal and sodium barbital to sodium bromide and sodium rhodolate.

Case (E. S.). Age 36. Diagnosis, dementia præcox, catatonic. Psychotic features had been present for over 8 years prior to treatment. She had received sodium bromide at intervals over prolonged periods with no marked effect. She was assaultive, noisy, self-abusive, frequently broke windows, was resistive, untidy, and had to be spoon fed. Bromide was discontinued on December 9, 1931, and she was placed on sodium amytal, 6 grains daily, until January 6. At this time she was less resistive, fed herself, talked about her son and school life. This lasted only a few days, when she again reverted to her old tendencies. On January 15 she was started on sodium barbital, 10 to 20 grains daily. She gradually became quieter, less resistive and assaultive, but otherwise showed no change. On February 18 she was given  $7\frac{1}{2}$  grains of sodium rhodolate in 10 c.c. of sterile water intravenously. This was given at 3:45 p. m. and she remained quiet for that night. The following day, however, she was more upset than she had been in some months previously and remained so until after the institution of sodium barbital, 20 grains daily, for four days. Since that date she has been receiving 10 to 20 grains daily and with its use she is not so upset, assaultive or resistive, and her care has been facilitated.



Four cases of epileptic psychoses were treated with sodium rhodolate. Two of these were deeply regressed, the other two showed a typical epileptic personality with only mild psychotic features. The first two were somewhat more disturbed while under treatment, the latter two became markedly toxic on small doses, and their behavior indicated features of delirium. The most striking reaction is cited in some detail.

Case (I. R.). Age 34. Diagnosis, epileptic psychosis, deterioration. Psychotic features had been present for 8 years prior to present treatment. She had been getting along fairly comfortably on luminal,  $1\frac{1}{2}$  grains daily, and free catharsis. She was doing some ward and occupational therapy work but was also having frequent seizures. On November 16 she was placed on sodium rhodolate, 5 grains, three times a day, and this treatment was continued until November 29. As a result her seizures were more frequent. She became confused, actively hallucinated, resistive, and assaultive, then passed into a stupor and slept soundly for six hours. After coming out of this she pounded the bed, was depressed, wept and cried, asked to be given poison and expressed ideas of self accusation. Following this episode she has been carried on luminal,  $1\frac{1}{2}$  grains daily, and free catharsis and continues in a fairly comfortable mental condition but has periodic disturbed spells in relation to seizures. At these times she is very resistive, assaultive, and shows suicidal tendencies. These disturbed periods did not occur prior to the use of sodium rhodolate. She continues to have frequent epileptic seizures.

The tendency of sodium amytal to produce deep narcosis and anesthesia caused us to consider it unfavorably as a means of maintaining continued sedation. We then considered sodium amytal to induce narcosis, and the use of sodium barbitol to continue the effect. We are reporting two cases in which this treatment was used to distinct advantage. As time goes on we hope to have many more to add to this series.

Case (P. S.). Age 37. Diagnosis, manic-depressive, manic. She was admitted to the hospital on February 18, 1932, with a psychosis of 6 months' duration. She was in a very excited condition, overtalkative, distractable, and under great pressure of psychomotor

activity. On February 19 she was started on continuous tub treatment and was spending from 12 to 14 hours daily at this. The rest of the time she was very difficult to manage. She was getting only from 1 to 2 hours sleep in the 24 hours and was becoming quite exhausted. In fact, it was a threatened collapse which caused us to try intensive sedation treatment. On March 18 she was given  $7\frac{1}{2}$  grains sodium amytal in  $2\frac{1}{2}$  c.c. sterile water intramuscularly. Within 15 minutes she became quieter and in 20 minutes went to sleep. She was then kept under sedation by the use of sodium barbital in 10 grain doses, which was administered whenever she was about to become upset. In order to maintain sedation for the first two weeks, 30 to 40 grains daily were required. During this period, however, the patient was able to be awakened for nourishment and general nursing attention. Later the dose was decreased so that only 10 to 20 grains were necessary in the 24 hours. On April 7 the patient was up and about the ward, in good contact with surroundings, somewhat overactive at times but not assaultive, had an excellent appetite, and had gained in weight.

Case (A. B.). Age 22. Diagnosis, dementia præcox, catatonic. This patient was admitted to the hospital on February 12, 1932, with a psychosis of 2 months' duration. On admission she was quiet, resistive, had a dull apathetic expression on her face, and appeared to be taking no interest in her surroundings. She gradually became excited, restless, assaultive, clapped her hands, chanted in a sing-song voice, had to be spoon fed and appeared quite fearful. It was thought that she was a suitable case to be tried on intensive sedative treatment. On March 18 she was given  $7\frac{1}{2}$  grains sodium amytal in  $2\frac{1}{2}$  c.c. sterile water intramuscularly. She fought the effects of the drug and did not go to sleep until after the administration of 10 grains of sodium barbital by mouth, which was given one hour later. She then continued to sleep through the remainder of the night on an additional dose of 10 grains given at midnight. In order to maintain sedation in this case for the first two weeks approximately the same dosage of sodium barbital was required as in the previous case. During the whole of this period, however, she could be aroused for nourishment and general nursing care. Later the dose was decreased so that only from 10 to 20

grains were necessary during the 24 hours. During the whole of her period in bed the patient remained mute, but more recently has begun to move her lips in an apparent effort to answer questions. On April 7 the patient was up and about the ward, appeared to be taking some interest in her surroundings, was only occasionally mildly assaultive, had been eating voluntarily, had a good appetite, and had gained in weight.

### CONCLUSIONS

(1) Sodium bromide has been used and observed over a period of nearly six years. From our observation we feel that definite therapeutic results have been demonstrated, that is, the improved cases have been maintained at a higher level and are productive.

(2) In the four cases of psychosis with epilepsy in which sodium rhodonate was given the reaction was as follows: The two deteriorated cases became somewhat more disturbed but seizures were not influenced; the two cases showing a well-preserved personality reacted by showing severe increase in both psychotic manifestations and convulsive seizures. We can consider this drug contraindicated in these individuals.

(3) The use of sodium amytal to induce and sodium barbitol to supplement prolonged sedation offers, we believe, a fruitful field for further investigation and from our experience offers a method of control in extremely excited cases.

(4) Except for immediate effects sodium amytal does not appear to have better sedative value than the more prolonged use of sodium barbitol or sodium bromide.

(5) The use of sodium rhodonate showed beneficial results in a few cases but seems to have a more limited field than the other drugs considered in this series.

(6) The results obtained from treatment in this series with the exception of those obtained from the use of sodium bromide form an initial report. We hope that at a later date we may be able to show more concrete results.

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## A PRELIMINARY REPORT ON THE RESPONSE OF CASES OF HYPER AND HYPO-MOTILITY TO BULBOCAPNINE INJECTION

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Peters<sup>1</sup> in 1904 reported on pharmacological studies of the corydalis alkaloids. He stated that they had been used as a therapeutic agent "as a wine decoction in various affections of the head and nerves, and in association with tremor, pain and paralysis of the extremities."

Wachenroder first isolated the alkaloid in 1926. Since then chemical properties of the group were the object of investigation by Schmidt, Nolle, Ziegenbein and others!

Gadamer in his studies as reported by Peters, divided the eight crystalloid alkaloid series into three groups on the basis of their basicity, and of their behavior in alcoholic iodin solution, as follows:

1. Corydalis group
2. Corycavin group
3. Bulbocapnine group, strong bases which do not form with an alcoholic iodin solution any characteristic oxidation products.

Peters in his experiment found that dogs on a dose of .02 gm. per kgm developed a state in which they did not respond to environmental stimuli. Paralysis was not present. They would respond to passive movement so that hypertonicity was not present.

He further observed that cats previously treated with bulbocapnine did not show the typical motor irritability in response to subsequent injections of morphin.

He concluded from his animal experiments that bulbocapnine might be of clinical value in the control of cases of motor irritability.

DeJong and Baruk<sup>2</sup> reported that animal experimentations showed that bulbocapnine produced four steps of intoxication in mammals. These were: (1) with small doses, sleep; (2) with moderate doses, catalepsy and negativism; (3) with very large doses,

simple hyperkinesis as tremors; (4) with extreme doses, epilepsy and sometimes states resembling decerebrate rigidity.

They stated that "the cardinal symptoms of catatonia especially correspond to the phases of moderate intoxication," namely, stages 2 and 3.

Henry<sup>3</sup> described the production of the motor components of catatonia in animals. He agreed with DeJong and Baruk on the necessity of the presence of the neopallium in the production of experimental catatonia. These authors described the motor behavior as a type of voluntary tetany.

Ferraro<sup>4</sup> in his discussion of Henry's report showed that after removal of the cortex and after division of the crossed corticospinal pathways, that experimental catatonia could still be produced in apes in response to bulbo-capnine injections.

Mella<sup>5</sup> reported the use of 200 mg. doses in paralysis agitans as producing cessation of tremors for periods of from 3 to 6 hours.

Because of this and its known action in producing in appropriate dosage in animals, conditions of altered motility of muscle and tone, we selected a limited group of cases presenting different muscular states.

These were: 1, dementia præcox, hebephrenic type; 1, psychosis with mental deficiency. (These two cases were selected as they showed no muscle disorder), 2, akinetic catatonic states; a, post-encephalitic Parkinsonism with tremor and hypertonicity; b, Huntington's chorea with hyperkinesis but without hypertonicity.

*Case 1. S. B. Hebephrenic dementia præcox. Male, aged 35, duration 1½ years, weight, 118 pounds, blood pressure, 110-80. Usual muscular behavior. Slow in movement, inactive. Would remain for long periods of time in one place on the ward. In response to command or passive movement, he showed correct muscular response and there was no disturbance of reflexes. Physical examination negative.*

*Experiment:* 100 mg. bulbo-capnine hydrochloride in 2 c.c. of sterile distilled water was injected subcutaneously into right breast.

*Results:* There was no change in blood pressure, respiratory rate or pulse rate. No dermal reaction occurred at site of injection.



No periods of sedation or sleep appeared. No alteration in muscle activity or behavior was found. The results in this case were negative.

*Case 2, H. S.* Psychosis with mental deficiency. Male, aged 51, duration 22 years, weight, 118 pounds, blood pressure, 130-90.

*Usual Muscular Behavior:* No disorders of muscle motility or tone, no tremors, athetosis or choreiform movements. Is responsive and cooperative to command and to passive movement. Reflexes normal. Physical examination essentially negative.

*Experiment:* 100 mg. bulbocapnine hydrochloride in 2 c.c. of sterile distilled water were injected into the left breast. There was no alteration in blood pressure, respiratory or pulse rate. No dermal reaction occurred at site of injection. No period of sedation or sleep was apparent. No alteration in muscle activity or behavior. The results in this case were negative.

*Case 3, A. B.* Dementia præcox, catatonic. Male, aged 28; duration, 5 years; weight, 150 pounds; blood pressure, 108-72.

*Usual Muscular Behavior:* He showed a stupor reaction. He would not move unless led or pushed. He would not dress or undress himself or feed himself. He maintained a mask-like facies. There was a mild degree of cerea flexibilitas. He maintained an attitude of partial flexion of the body with head bent forward on chest. All muscle movements were slow, hesitating and jerky in performance. No tremor was present. There was no hypertonicity. Reflexes were slow in response, difficult to elicit but not diminished. Pupils reacted to light and accommodation and were dilated.

*Experiment:* 150 mg. bulbocapnine hydrochloride in 3 c.c. of sterile distilled water were injected subcutaneously into the left breast.

*Results:* In five minutes he raised his head and smiled. He voluntarily asked for a cigarette. He was offered a choice of cigarettes and selected one. He was unable to light the cigarette although he tried. He remained sitting upright in his chair, smoking with apparent enjoyment. He answered questions readily, accur-

ately and with interest. Reflexes were tested and found to be quite active and normal.

Pupils were contracted to mid-dilatation. Before he had completed smoking the cigarette he was observed to droop his head, close his eyes, relax his arms and legs so that the latter were extended in an awkward position. This stage lasted about five minutes. He was conscious, as he attempted to raise his head in response to command. He resisted slightly, having his eyes opened. Pupils were contracted almost to pin point. Reaction to light and accommodation not obtained. Auditory stimulus produced a twitch response of the eyelids.

Reflexes at the knees were unobtainable. Arms and legs were completely relaxed and if lifted dropped in any position as in a flaccid paralysis. This stage lasted about five or six minutes. He then was completely relaxed. He was asleep and snoring. He remained thus for 8 to 10 minutes. He then began to rouse and recovered very slowly until at the end of a further 15 minutes he walked voluntarily, without assistance, to the ward.

On reaching the ward, he asked for the Saturday Evening Post and spent the next five hours reading this. He was apparently interested in his reading and the activities of the ward. This was the first voluntary reading the patient was known to have done in a period of five years. He then went to bed, but on awakening the next morning was in his usual former state of catatonia.

*Case 4, R. R.* Dementia præcox, catatonic. Male, aged 24; duration, 4 years; weight, 119 pounds; blood pressure, 112-78.

*Usual Muscular Behavior:* His usual attitude is to remain in the same chair throughout the day in a semi-flexed position, with head bent forward, right arm flexed and right hand extended, with legs crossed. He will not move voluntarily and has to be moved or pushed when he will show resistance. He shows no facial expression except an occasional flitting smile. He would occasionally answer questions but without interest and with frequent inaccuracies. Does not show cerea flexibilitas or peculiar poses.

Reflexes appeared to be slightly diminished. Pupils reacted to light and accommodation, and were in mid dilatation. There was cyanosis of the ears, lips, fingers and hands, forearms and legs.

*Experiment:* 200 mg. of bulbo-capnine hydrochloride in 3 c.c. of sterile distilled water were injected into the right breast.

*Results:* During the injection there was some vacillation in the blood pressure but no marked alteration. Pulse rate slowed slightly. Respirations showed greater excursion and changed from the abdominal to the thoracico-abdominal type. Eight minutes after injection a slight hyperaemia appeared at the site of injection. This reached its height in 15 minutes but showed no wheal formation. In 28 minutes he was apparently asleep and was snoring. Eyelids were resistive to passive movement but all other muscles were relaxed. Five minutes later he was awake and as far as could be observed had returned to his original state.

*Case 5, E. J.* Post-encephalitic-Parkinsonism. Age 31; duration, 12 years; weight, 153 pounds; blood pressure, 116-70.

*Usual Muscular Behavior:* He showed a mask-like facies. His head was rotated to the left and upward. This becomes accentuated on voluntary movement. He has oculogyric crises which increase the torticollis. There are coarse jerky movements of the head, eyes and neck to the left. At rest the tremor is more pronounced on the right side than on the left. On voluntary movement the tremor is greater on the left than on the right. To passive movements less resistance was found in the left arm than in the right.

*Experiment:* 200 mg. bulbo-capnine hydrochloride in 3 c.c. of sterile distilled water were injected subcutaneously into the right breast.

*Results:* There was no alteration in blood pressure, respiration or pulse rate. No dermal reaction occurred at site of reaction.

No period of sedation or sleep was apparent. No alteration in muscle activity, choreiform movements or spasticity was obtained. The results in this case were negative.

*Case 6, K. Y.* Psychosis with Huntington's chorea. Female, aged 35; duration, 1 year; weight, 139 pounds; blood pressure, 140-75.

*Usual Muscular Behavior:* (In January, 1932, she had measles following which choreiform movements were worse. Father died

of Huntington's chorea.) She presented the typical characteristics of an early Huntington's chorea, involving the head, neck and arms particularly. There was a slight involvement of the legs not sufficient to alter gait but balance was disturbed by the trunk involvement. The stage was mild enough so that she could still convert the choreiform movement into an apparently purposeful action.

Pupils were in mid-dilatation. They reacted to light and accommodation. Knee jerks were 2+. Elbow jerks were not obtained. Coordination was FF poor, KN poor. Respiratory coordination jerky in character.

*Experiment:* 200 mg. of bulbo-capnine hydrochloride were injected into the subcutaneous tissues of the right arm.

*Results:* In three minutes an erythema developed at the site of injection which was 3 inches in diameter. This rapidly spread to involve an area approximately 3"x4". A dense white wheal formation appeared in the center of this 1"x1½". In 14 minutes patient was lying relaxed. Respiratory movements were smooth in character and showed full excursion. Choreiform movements involving the jaw and head ceased. Voluntary movements did not reactivate the chorea nor did passive stimulation elicit such response. In 16 minutes reflexes were elbow jerks left 2+, right 1+. Knee jerk 2+. Pupils were in mid-dilatation reacted to light and accommodation. No choreiform movements of legs were present. But at the end of 35 minutes these movements had returned.

*Case 7, T. T.* Psychosis with Huntington's chorea. Male, aged 55; duration, 9½ years; weight 110 pounds; blood pressure, 132-60.

*Usual Muscular Behavior:* Patient exhibits an advanced state of Huntington's chorea, involving the entire body. So strong are the choreiform movements that he frequently loses his balance. Speech is almost unintelligible because of the tremor of the tongue and the jactitating movements of the jaw. Reflexes: Eyes react to light and accommodation, knee jerks were exaggerated, elbow jerks very much exaggerated, planter reflex showed a mass response.

*Experiment:* 200 mg. of bulbo-capnine hydrochloride were injected into the right breast subcutaneously.

*Results:* In about 5 minutes a zone of erythema developed at

the site of the injection. This spread rapidly in an irregular fashion, until it covered an area of approximately 8"x4", with a tense well defined white wheal 1½"x2" in the center. In 18 minutes pupils had contracted to mid-dilation and did not react to light. In 20 minutes he was somnolent. In 25 minutes the choreiform movements of the legs had diminished. In 26 minutes he was snoring but awakened to auditory stimulus. In 33 minutes pupils were pin point and did not react to light.

Reflexes: Knee jerks, left was sluggish but showed a greater excursion than the right. Elbow jerks were still exaggerated. In 43 minutes he had apparently resumed his usual state. At no time did the arms and legs show complete relaxation or disappearance of the choreiform movements.

#### COMMENT

DeJong and Schaltenbrande<sup>6</sup> in their study of the action of bulbocapnine in paralysis agitans, consider that they found the maximum dose for man to be 200 mg. This dosage did not produce anything resembling catatonia but had a brief inhibitory action on tremors and produced a slight increase in muscular tonus.

Henner<sup>7</sup> using doses of 200 to 500 mg. produced a condition which he termed "paralysis agitans" but which DeJong and Baruk<sup>2</sup> considered to be an atypical form of induced catatonia. On the basis of the dosage required to produce experimental catatonia in animals (20 to 40 mg. per kilogram. in cats) it would be necessary to use for man, doses of 12 to 24 gm.

In view of the above reports as to dosage it has to be recognized that the amounts used in our cases are inadequate for the production of any marked alteration in muscular response. In the two cases showing no muscular disorder, a dose of 100 mg. produced no observable change.

Buscaino, as mentioned by Ferraro<sup>4</sup> considered that catatonic patients given 100 mg. of bulbocapnine intravenously showed an accentuation of the catatonic state. Our Case No. 3, dementia præcox, catatonic, on a dose of 150 mg. subcutaneously on the contrary showed stimulation so that he was more active and alert and per-



formed voluntary movements with an almost normal degree of freedom.

Case No. 4, dementia præcox, catatonic, on a dose of 200 mg. subcutaneously failed to show any apparent alteration either of an increased catatonic state or improved muscular response as shown in our case No. 3.

Case No. 5, post-encephalitic—Parkinsonism, showed no diminution in his tremor to a dose of 200 mg. subcutaneously. On the other hand, there was no increase in spasticity.

In cases Nos. 6 and 7, Huntington's chorea, on doses of 200 mg. subcutaneously we found an appreciable response. The case with a mild degree of symptoms did not respond as strongly as the one in the more advanced stage. They both showed sedation, quite transitory in character, and a short period when the tremor seemed to be in abeyance.

DeJong and Baruk<sup>8</sup> report that respiratory disorders were frequently produced in animals by bulbo-capnine intoxication. No respiratory disorders were produced in our cases. One catatonic showed a deeper excursion and an alteration from a limited abdominal to a full thoracic-abdominal type with increase in rate. The two Huntington's chorea cases during the cessation of their chorea, had an apparently normal respiratory excursion.

Pupillary reactions were obtained in two cases. The first, dementia præcox, catatonic, on 150 mg. showed pin point pupils. A similar result was obtained in a case of Huntington's chorea on 200 mg.

The most striking observation was that of the appearance of the rapidly spreading erythema with a tense white wheal formation in the center in the two cases of Huntington's chorea. This might be considered an allergic dermal reaction, but we have no foundation for this suggestion. It might open a fertile field for speculation and further experimental study.

#### CONCLUSION

Seven cases are reported. Two with no disorders of muscular motility, two with muscular disorders dependent upon their psychoses and three as a result of organic nervous disease. Varying



doses of bulbo-capnine hydrochloride were exhibited subcutaneously without obtaining results such as reported by other observers.

It must be recognized that in comparing results previous observers as well as ourselves were without a scale of response of normal healthy individuals of varying age, sex and weight which could be used as controls. Such comparisons moreover must consider the response to dosage and the variance in individual idiosyncrasy and the variable alteration of the neuro-muscular state. Considering such factors, therefore, we cannot in fairness compare our results with previous observations.

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## A FEW REPRESENTATIVE CASES OF PYROMANIA\*

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In our hospital for the mentally ill we are not particularly interested in the crime the patient has committed except when it has some special significance. We are rather concerned about the organic brain disease or personality defects of the individual that may have been responsible for his crime and the unconscious motivation of his act. We are badly handicapped in most cases because of poor cooperation of relatives, by lack of authentic information regarding the personality make-up prior to the onset of the psychosis or the commitment of the crime; also in many cases by a lack of cooperation on the part of the patient, who is unable to appreciate that he is here for treatment and not for punishment. One of the few types of criminal insane that are cooperative and amenable to treatment is the so-called pyromaniac.

Pyromania is a term which in its common usage is very much abused, individuals who have committed arson for any of a variety of reasons being referred to as pyromaniacs. Acts of incendiarism are in the great majority of instances deliberately perpetrated for personal gain of some sort or with a conscious desire for revenge, or in some cases by mental defectives who take a childish delight in producing a conflagration, the destructive force of which they are unable to appreciate. Under pyromania we consider only cases which present no conscious motivation. They cannot as a rule give any adequate reason for the act and seldom even attempt to rationalize it. The act of the pyromaniac is so little his own that even if otherwise of a normal nature he is unable even to display the proper regret. He will tell you he does not know why he did it, that an indefinable something within him forced him to commit the act. His conduct is motivated by an emotional force from the unconscious, the origin of which is not apparent to either himself or others.

The conduct of the pyromaniac may be either impulsive or compulsive in origin. Impulsive conduct refers to actions that are

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accomplished unexpectedly, without reflection and without the assent of the whole personality. There is no conscious aim and such acts are often distinguished by haste, violence and absence of regard for the interests of either himself or others. Some sudden obsessive acts are inaptly called impulsive. These are conscious acts running counter to the will and proceeding from an inner impulse which the personality cannot resist. Notwithstanding the impulsive element, the pyromaniac often premeditates his act and performs it with a certain refinement. Some pyromaniacs, therefore, are not immediately detected.

During the accomplishment of the act some seem to be in a kind of twilight state while others reflect and go through a conscious struggle between the impulse to commit the deed and their morality which tends to inhibit the act. In most instances the individual's resistance against committing the act is connected with fear, anxiety or some other vague uneasiness, to the influence of which the personality finally yields, in the same way as a physical pain forces one to do something he does not wish to do. Anxiety appears as soon as the patient tries to resist the impulse and it is anxiety that makes it impossible for him to suppress the impulse in spite of the fact that he is willing and knows better. Indeed, the execution of a compulsive act may actually be accompanied by a feeling of voluptuous satisfaction.

The impulse to set fire is observed most frequently among young people who find themselves in an unbearable situation. In some cases, the unbearable situation lies in a sexual affair or in ungratified sexual cravings. Others experience direct sexual excitements through setting or watching the fire. Freud would ascribe to all such acts a sexual origin. He has attempted to explain obsessions by assuming that any relatively innocent idea may be connected with another idea previously repressed because of its unbearable content. The former then receives the affective endowment of the idea which has become unconscious and forces itself into consciousness in place of it. Stekel in his book, "Peculiarities of Behavior," cites many cases of pyromania in which the act appears to be motivated by some otherwise unattainable sexual gratification. These also tend to indicate the close association of "fire" and "passion";

indeed to the unconscious these two terms would seem to be more or less synonymous. Analysis reveals, however, that numerous motives often conjoin to bring about the solution of a single act. Stekel further contends that there are no monomanias, that careful analysis will reveal the presence of other morbid impulses (dromomania, kleptomania, etc.) having the same motivation and attempting to satisfy the same unconscious craving.

Pyromania appears in very diverse dispositions. While it is often a part of the syndrome of a more serious mental disorder, some of these patients do not even seem very morbid and can later lead a normal life. Their intelligence is often above the normal. Having a clear sensorium, no delusional ideas, a fairly adequate emotional reaction, apparently aware of and responsible for their actions and capable of discerning between right and wrong, they receive little sympathy from the general public and are even treated scornfully by the true criminal, but they are nevertheless the victims of a force beyond their control.

Case No. 1, E. K. A single man, aged 18, admitted to hospital June 5, 1931, from prison where he was under indictment charged with "attempted arson, first degree." He was arrested at 1:30 a. m., on April 17, 1931, while standing outside an apartment house in which there was a fire. He had set fire to two baby carriages in the hallway of this building and later admitted that for a period of approximately six weeks he had been setting fire to baby carriages in the hallways of apartment houses. On admission he appeared mildly depressed but presented a well integrated personality, a clear sensorium and no disturbance of stream of thought, no evidence of delusions or hallucinations. He was unable to suggest any reason whatsoever as to why he should have committed these acts, except that some force within him suggested that he do it, but he cooperated and gave the following information about his past life and events leading up to the crime.

Patient had three sisters and two brothers in that order and was the only baby in a family of adults, having been born when his youngest brother was already twelve years old. He received much attention, particularly from his eldest sister who cared for him through infancy and early childhood and he recalls that she nursed

him through a serious illness. When he was six or seven years old, however, this sister eloped and married, later settling down near home and having several children, which he in turn was obliged to help take care of. He has not as yet emancipated himself from home and as long as he can remember has lived with his parents on the second floor of an apartment house. Although late in starting to school because of illness he made good progress and graduated from grammar school at the age of 15. Had never before been in any serious difficulty.

On leaving school he went to work as a plumber's helper and later secured employment as a bellhop in a New York hotel but was discharged from this position January 1, 1931, for supplying guests of the hotel with liquor and since then had been idle. One night in February while returning home from a dance he was accosted by a man in his thirties who, after asking him for a match and lighting both their cigarettes, persuaded him to submit to fellatio and, taking him into a hallway of an apartment house, performed the act twice. He experienced a sensation of mixed pleasure and pain. Had previously wondered what the sensation was like but would not care for it again. Losing his job and being unable to find further employment had made him melancholy, he could not get interested in anything and claims this perverse act made him feel more or less disgusted with himself.

A few weeks later he met some boys who invited him to attend dances at a club and on his way home from the first of these dances he stopped in the hallway of an apartment house to light a cigarette. Seeing a baby carriage in the hallway he became obsessed for the first time with the idea of setting fire to one, which he did with some papers in the bottom of the carriage. He then continued this practice but claims that only on the way home from these dances, which he attended two or three nights a week, did he ever experience any compulsion to set fire. States that he always turned in a fire alarm but never waited to see the fire engine come and took no further interest in the fire. He would go directly home and to bed where he slept soundly. He claims that he attempted to resist the impulse to set fire but when he did so the feeling became stronger and stronger until he was compelled to yield, following



which he experienced a sense of relief, and the fact that he had destroyed someone else's property troubled him not at all, in fact, never occurred to him.

Patient had never kept company with any girl nor taken one home from a dance and the idea of fire never occurred to him until he had left the others and was by himself. He denies that any sexual emotion or other thrill accompanied the act but claims that during the whole period he was setting fires he neither masturbated nor experienced any nocturnal emissions, in fact, the idea of masturbating never troubled him during this time. He had masturbated since the age of thirteen or fourteen but always with a feeling of guilt and had endeavored to resist the temptation because he feared it would undermine his health. He masturbated a great deal more after losing his position because he had more time to think of himself but he worried about it and had managed to stop the practice entirely about a month prior to setting the first fire. This required much will power, however, and he often felt under considerable tension. He gained the same relief and relaxation from this tension each time he committed arson as he formerly had by masturbation and it is rather significant that he only perpetrated this offense on the way home from a party where he had been dancing with girls and this sexual tension had become more or less aggravated.

The inference of the above, it seems, is fairly clear, viz.: that we have here a replacement mechanism. The act of setting fire had been unconsciously substituted for and had taken on all the attributes of the act of masturbating. As to why he chose fire as the substitute, however, and why it was essential that he destroy baby carriages in hallways is not as yet at all clear. The close association of the ideas "fire" and "passion" in the unconscious may help to explain the former.

He is not aware that as a boy he evinced any greater interest in fires or fire engines than the average boy does and had never to his knowledge set fire to anything before. The first fire he remembers was the burning of a large tenement near his home when he was ten years old, but this seems to have made no particular impression upon him and he can recall no dreams in which fire played



a part. He is unable, moreover, to recall any incident in which either fires or baby carriages played any important part in his life. Patient states, however, that there were never any baby carriages in the hallway of the apartment house in which he was reared because there was a fire ordinance forbidding them. Baby carriages in hallways were always associated in his mind with the idea of fire hazard. This may or may not be of significance.

The homosexual assault made upon him in a hallway a few weeks previous, it is believed, did play a part not only in increasing his sexual tension but also in the selection of the place where the substituted act should take place. Although patient states that he recalls no coercion or feeling of rebellion in connection with having to care for the children of his eldest sister, there is still the possibility that he may have unconsciously resented the usurpation of his place in the interests of the mother surrogate by other children. This feeling may in turn have been reflected in his impulse to destroy baby carriages during his temporary regression to a lower level of reaction.

Case No. 2, G. V. This man, aged 28, was admitted to hospital January 26, 1932, from prison where he was under indictment charged with "arson, second and third degree." He appeared quite unconcerned over the situation and frankly admitted having set fire to buildings on the estates of several prominent men by whom he had been employed between the spring of 1928 and the fall of 1931. He hadn't the slightest idea why he had done this and claimed that on no occasion had he expected or received any benefit whatsoever from his incendiary acts, committing them for no purpose other than to gain relief from an uncomfortable feeling of compulsion. He had frequently become obsessed with the impulse to fire some building but on most occasions fought it off. He usually had it on his mind for a day or two before committing the act but his conscience never troubled him afterwards, he would immediately lose further interest in the fire, be able to relax and enjoy a comfortable sleep. Claimed there was no satisfaction in watching a fire and that he secured just as much relief if it immediately went out. Denied that he ever masturbated or experienced any sexual satisfaction in connection with the fires. Had masturbated since

the age of twelve and still did so about once a week but denied that this had ever worried him or that he had at any time attempted to break himself of the habit. He admitted hallucinations, on some occasions having heard the employer tell him to set fire, but now believed these voices were imaginary. His sensorium was quite clear and he admitted he must have been insane or he would never have committed such acts.

A knowledge of this patient's background and early life experiences may be of some assistance in helping to understand his more recent difficulties and reaction to them. He was born in 1903 and as a child was reared by two aunts and an uncle on the large estate of his grandfather, a judge and the mayor of a municipality in Ireland. His father had previously been disinherited by the grandfather because he had run away from home, married and settled in New Zealand. Patient was left with his grandfather at the age of six months, since which time he has never seen his parents who shortly afterwards separated. Although surrounded by every luxury, his childhood was not a happy one because of the ultra-strict discipline of the home in which he was raised. He resented that he was not allowed the privileges enjoyed by other children in the neighborhood and recalls that he was unjustly beaten by his aunt for every small misdemeanor and also by his teacher for being late for school, a situation also forced upon him by his aunt.

His grandfather died when he was nine years of age and the following year he migrated to Canada with his aunt and uncle and settled in Toronto where he continued in school. Two years later, (1915) his uncle went overseas and his aunt began to entertain other men in her home. He reacted by running away from home on several occasions and was later told that about this time he also set fire to a tent but does not recall now that he did this. He was placed on a farm where he remained for three years, progressed in school to the eighth grade and recalls being very happy there because he was well treated and granted considerable freedom. His uncle returned from the war about this time but shortly separated from the aunt and endeavored to secure a divorce. Patient had been sent to a private school but took no interest in his work and was expelled after six months.

In 1919 he returned to Ireland to his other aunt who had since married and was living on the old estate but, becoming discontented there, he joined the Sinn Feiners and took part in the rebellion, although only sixteen years of age. Part of their activities consisted in raiding the estates of prominent British sympathizers and putting the buildings to the flames. On occasions they also waylaid bus loads of girls returning from dances at the barracks, stripped them of their clothing, assaulted them and forced them to walk home naked, following which they destroyed the bus and clothing. In April, 1920, he was captured and deported from the country, returning to Canada.

His aunt had purchased a large farm at Niagara Falls where he lived for varying periods during the next three years, being employed in the intervals at different places in Michigan. In the spring of 1923 he took out his first citizenship papers in Buffalo and enlisted in the American Army but deserted in San Diego and shipped as a seaman on a boat around the world. He again joined the army and again deserted on the impulse of the moment and returned to his aunt's farm, where he met the girl who later became his common-law wife. After he had secured a position with a motor car company in Detroit in 1924, he sent back for this woman but, there being some obstruction to their marriage because of residence regulations, they continued to live together unwed.

A few months later, he learned that this woman had previously given birth to a child, the father of which was a negro. He continued to live with her for three and one-half years and had a son by her but this worried him so much that he was unable to take an adequate interest in his work and was making many mistakes. In the spring of 1928 he resigned his position and deserting her and his son, in whom he had been unable to interest himself, he came to New York where he secured employment on the estate of a wealthy man.

He had up to this time never entertained any ideas nor felt any impulse to set fire, but he had been employed only a few weeks when he was forced to yield to such a compulsion and destroyed his employer's home. He was not suspected and two months later he resigned and joined the Marines. While stationed at the Brook-

lyn Navy Yard he set fire to two more buildings. About Thanksgiving, 1928, he deserted the Marines and joined the army but deserted again even before he reached his assignment and going to Philadelphia again enlisted in the army and was sent to Fort Huston, West Virginia. In January, 1929, he was arrested for desertion and placed in detention on Governor's Island, where he remained until June, 1930.

Upon his release he secured employment on a large estate, had no trouble there and still has pleasant associations with that place. He resigned about Christmas, 1930, in order to marry but left his wife within a few weeks because she had infected him with gonorrhea. In March, 1931, he again secured employment on a large estate and within a few weeks yielded to a compulsion which had again obsessed him and set fire to his employer's home. Leaving there in May he went to work for another wealthy family and there destroyed the barn.

It is to be here noted that for an interval of two and one-half years he had set no fires and had then resumed the practice. He states that following the desertion of his common-law wife and until he left the Marines, he had received a number of letters from both her and his aunt begging him to return, that these worried him a great deal and that only following receipt of these letters did he become obsessed with the idea of setting fire. He was then free from this compulsion, after losing communication with these women, until his second wife began to worry him with letters following his desertion of her. When she stopped writing him he felt no further urge to commit arson. He then secured employment on still another large estate in July, 1931, and was getting along very well when in October he was persuaded to set fire to two buildings there by other employees who knew of and threatened to reveal his past escapades if he did not do as they wished. This was part of a plan to avenge themselves on the hated superintendent of the estate whom they then accused of the crime, but patient was soon suspected and then confessed to the whole series of fires.

Now, as regards the origin of this compulsion and the unconscious motivation for his acts, one as yet can only conjecture but our superficial study of the situation reveals certain significant

facts. Throughout his whole life there has been, as a result of his childhood experiences, an inherent desire to revolt against the home situation and against organized authority, to which he impulsively yielded whenever the situation became too unhappy. There may also be in this respect some identification with his own father. The fact that following the tragic termination of both his attempts to lead a normal heterosexual life, he always sought employment on an estate somewhat similar to his childhood home may, however, signify an unconscious desire to retreat to its protection. He admits that at times he has felt that he should have been the heir and not just an employee on such an estate and there may have been an unconscious resentment toward and desire to do harm to society that had been so unkind to him. He would have been happy in such a situation, however, had he not been disturbed by letters from his wives that persisted in reminding him of that which he most wanted to forget. When the situation became unbearable he revolted and struck out blindly, unconsciously reverting to the childhood situation and directing his blows against the head of the house. The nature of his attack, that is by fire, may have been conditioned by his experiences during the Irish rebellion at the still impressionable age of sixteen, but there is probably a much less obvious and more deeply buried explanation for this. He has thus far been unable to furnish any particular dream material for analysis.

Case No. 3, P. D. A single man, aged 31, admitted to hospital March 7, 1932, from prison, where he was under indictment charged with "burglary, third degree." On admission he was mildly depressed and emotional and worried over the predicament he was in, but he presented a good personality, had a clear sensorium and displayed no evidence of delusions or hallucinations except that when depressed or meditating he heard the voice of his mother telling him to behave himself and to keep up his courage.

He was the illegitimate child of his mother but had no knowledge of this until he was 21 years old. He was the eldest of a family of three boys and two girls and recalls that his supposed father discriminated against him and abused him even as a small child, his mother always protecting him or taking his part. He



was forced to go out and earn money while still very young but managed to put himself through school, completing one year at Toledo University at 19, following which he spent two years at night school studying commercial art. As further evidence of his stability, he was employed by the Toledo Autolite Company for six and one-half years, receiving an average of \$30 to \$35 a week.

He had kept company with but one girl who died at the age of 19 but this was evidently a brother-sister relationship as he experienced no sex feeling and had no knowledge of sex whatsoever until he was 21 years old. At that age he accidentally witnessed a man and woman having sexual intercourse and before he realized what it was all about, had an ejaculation. This mysterious occurrence frightened him but he confided in no one and thereafter proceeded to masturbate quite regularly with the phantasy of the above as a stimulus. His mother died about this time and he felt her loss very keenly. A little later he received a suspended sentence for assaulting a man who called him a s. o. b., feeling that this was a reflection upon his mother.

He had no further conflict with the law until January, 1927, when he was arrested charged with arson and admitted having kindled many small fires, most of which, however, he had been able to extinguish after he had masturbated. Previous to this he had been experiencing nocturnal emissions on dreaming of fire but withstood the impulse to re-enact this in reality as long as he could. He received a sentence of 1 to 20 years in a reformatory but after one year was placed in an honor camp from which he escaped in February, 1930, and came to New York. There he lived with former friends, worked as a commercial artist and at various other jobs and conducted himself in an orderly way until September 15, 1931, when he was arrested in the act of robbing a house.

He had been out of employment for two months at this time and was on his way home from Coney Island where he had been unsuccessful in securing expected employment and was somewhat disheartened. Although in a hurry to get home to supper, for some unknown cause, he left the subway at a station one and one-half miles from his destination and started to walk. As he walked along the street he saw an open window and became obsessed with



the idea of entering the house. He walked back and forth for some time endeavoring to fight off the feeling but was finally compelled to enter and found himself in a darkened bedroom. He felt around, gathered up some trinkets from the dresser and then, becoming erotic under the excitement of the situation, stood and masturbated. He had then just begun to realize the full import of what he was doing and was about to leave when the front doorbell rang and he escaped through the window into the arms of the law. He admits that he had previously experienced compulsions to commit such acts but had successfully resisted and had gained relief from this tension by masturbating. This form of compulsion had evidently replaced that to commit arson which he had previously managed to repress, although he still had occasional dreams of fire with accompanying emissions.

Patient recalls one event in his early childhood that particularly impressed him. At the age of four, the tenement in which they lived took fire and he distinctly remembered being rescued with his mother, she with his baby brother in her arms. Following this, he frequently dreamt of fires and at the same time wet the bed. This enuresis lasted until the age of 12 and even after that he continued to occasionally dream of fires. The fright which he experienced because of fire at four and again on the occasion of his first sex experience at 21 may help to explain the close association in his mind of fire and sexual excitement, but there appears to be evidence of an even stronger bond in his marked mother fixation. A few months after his mother's death he first had sexual intercourse with a prostitute and he repeated this on three or four occasions but states that he was always frightened lest he contract some disease. Girls younger than himself never attracted him, however, and in all his heterosexual experiences, whether in reality, in phantasy or in dreams, he always unconsciously selected an older woman. The woman with whom he has lately been associating and for whom he evinces a marked affection is a widow with a baby boy, a woman not only older than himself but one with whom he played as a child when he was under the happy protection of his mother. She, moreover, has been the aggressor in their sexual relations.

He further relates the following recollection of his first nocturnal emission in association with fire: He dreamt that he was in bed with a woman and about to have sexual intercourse with her when a fire broke out in an adjoining room and he and the woman were both carried to safety. This would seem to be the re-enactment of a somewhat similar situation that occurred at the age of four, the woman being the mother-surrogate. Following this, he continued to dream of women and fires, sometimes of fires only, until the association of fire alone was always sufficient to give him the required sexual satisfaction. Thus the compulsion to set fires may be interpreted in this man's case as a regressive tendency, an irresistible unconscious desire to return to the mother. His last compulsive act, that of entering a darkened bedroom through an open window and there masturbating, may symbolically represent the same unconscious urge.

Case No. 4, B. S. Single man, aged 23, admitted to hospital February 8, 1928, from prison under indictment charged with "arson, first degree." He had set fire to the store of a competitor of his brother-in-law. There is no history of nervous or mental disease in the family. Patient is one of twins. When a few months old he was given carbolic acid by mistake but recovered and suffered no other serious illness. Had an appendectomy at 14 and for a short time complained of being dizzy but was in no way irrational. Graduated from grammar school at 14 and worked at various positions, last as elevator boy in a hospital. Received a suspended sentence for receiving a stolen bicycle at 17.

In 1927, his father, sister and brother-in-law all died within a short period and he became very nervous. While accompanying his mother on a visit to a sick relative in Bellevue he left her to have a doctor examine him and was later found in the psychopathic ward. Following the fire he made a confession, contradicted it and then stated that his brother-in-law had hired him and another boy to do it.

On admission to hospital he was euphoric, elated, overactive and very voluble, took the situation lightly and boasted that he had fooled everyone and "played bugs" before the commission. There were no apparent delusions or hallucinations at the time, he was

well oriented and his memory appeared good. Said he had had a little breakdown due to worry over the deaths in his family but he was all right now.

After three months he quieted down, conducted himself in an orderly manner, played games with other patients and assisted in the dining room. Also seemed to have some insight into his former upset condition. Stated that following his appendectomy, he was run down physically, worried constantly about his health and would gaze in the mirror for long periods to detect any signs of illness. Had lost ambition and felt nervous and depressed. Was beginning to overcome his fears, however, when he became involved in his present difficulty. He appeared rather nervous and uneasy whenever interviewed and stated that ever since his operation he had had a fear of physicians. Being thrown into contact with the medical profession caused him to worry again and said he lacked self-confidence.

Following this he became rather depressed and quite often complained about his physical condition, especially his chest, although examination failed to reveal anything wrong. He continued quiet and tractable but was easily excited and always dreaded being examined. Became quite pale, coughed in a nervous way, bit his nails and fidgeted in his chair. He was rather childish in conversation, making numerous explanations regarding his past conduct, but still no definite delusions or hallucinations.

In August, 1929, patient is first noted as acting very peculiar. Complained that other patients were talking about him and begged the physician for protection, that someone was going to harm him. Would quite often crawl under his bed at night looking for persons who were bothering him. Claimed he recognized many employees from New York who had been sent here to do him harm and noticed them making signs among themselves. At first denied hallucinations but later said he was not sure whether his thoughts were mixed up or came from somewhere else and heard whispers which threatened him. He went about asking other patients for matches and acted in such a suspicious manner that it was deemed advisable to place him in a room by himself.

In January, 1930, he was caught trying to start a fire in the

dormitory and would not explain his actions but he had just previously appeared quite fascinated by a bonfire on the outside. Following this he developed the idea that members of the staff were putting gas around his bed to suffocate him at night, they were trying to take his brain away from him and for several months he complained that he had been put under artificial sleep and wished to have it stopped. He reacted to hallucinations and at times showed considerable fear. Heard voices of members of the staff threatening to take his life and believed they belonged to a ring that was after him. A man who accompanied his sister to visit him was later believed to be a member of this ring. He retained his tendency to set fire and on several occasions has attempted to start a fire on the ward, in the toilet or in the dormitory.

Patient's hallucinations and delusional content continued essentially unchanged but during the past year he has deteriorated considerably, has become more indifferent, rather simple and childish and given to silly mannerisms. He is at present quite irrelevant and incoherent in his talk and unable to carry on a conversation or discuss any of his early life experiences or difficulties leading to his commitment here. He has never offered any explanation for his attempts to start fires and will make no comment on the subject at present but he recently did say: "I really don't understand why I did it myself."

In view of patient's inability to cooperate for analysis or give any authentic information and in the absence of an anamnesis of any value, it is impossible to arrive at a clear interpretation of this man's conduct. A prominent feature of his psychosis throughout, however, has been a fear of, subjection to and dependence for protection upon those in authority and this may reflect his attitude toward the father. His father's death appears to have played a precipitating part in the onset of his mental trouble, possibly because he unconsciously willed it. His older sister and her husband were possibly surrogates for his mother and father. After setting fire to a building, he claimed he was acting under orders from the brother-in-law, thus striking back at him and making him shoulder

the responsibility and when his sister visited him here, her escort, again a father-surrogate, is identified as his enemy. The fact that he first committed arson not by himself but in company with another boy and that his impulse to set fires here flared up following the development of ideas of reference and persecution by his fellow inmates, might suggest the inflation of homosexual cravings as a basis for his acts but this lacks further confirmation.

## THREE YEARS' OBSERVATION OF INTENSIVE SODIUM BROMIDE THERAPY IN FUNCTIONAL AND ORGANIC PSYCHOSES

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Kräpelin suggests the continued use of sodium bromide in epileptic insanity in doses of 4 to 6 grammes, (approximately 60-90 grains). He also noted a decrease in the length and severity of the attack in maniacal excitement by the use of the same drug in daily doses of 12 to 15 grammes, (approximately 180-230 grains). In 1916, Ulrich reported having successfully treated 10 cases of melancholia by use of a salt-free diet and bromide given to the point of marked intoxication. Klasi in 1922 applied a somewhat similar method in the treatment of 26 cases of dementia præcox by the use of somnifen, a drug which is chemically entirely different from the bromides. In 1925, Wright reported on the intensive use of bromide on a series of functional cases treated at the Utica State Hospital; he concluded that it acted as a sedative and as a quieting agent in the domain of the autonomic system causing a relief of agitation and tension, and a marked improvement in behavior. This is a supplementary report and deals with a three-year period of observation on a group of chronic cases. (Initial report, *PSYCHIATRIC QUARTERLY*, January, 1929). Of these cases 8 were organic in origin but the remaining 121 were functional. Not all cases were treated during the whole of this period. Many became sufficiently improved not to require further treatment. Other new cases were started, the same general principles as to dosage were carried out throughout. Some cases were found who showed improvement while being kept on a small daily average of 60-90 grains daily; others were found to do better with larger doses and more frequent intervals. It is interesting to note in this connection that large doses can be administered without deleterious effects. The highest dosage used was 360 grains daily over a period of a week, this amount being given at varying intervals and to different patients without producing bromide intoxication. Frequently the smaller dose has led to intoxication as quickly, if not more quickly, than the larger quantities.



While the belief is still prevalent that 60-90 grains of bromide daily constitutes a maximum dose, we have given 90-180 grains daily over prolonged periods. It is interesting to note in this respect that over 25 years ago Krapelin used 180-230 grains daily in cases of maniacal excitement.

The incidence of bromide rash was not so marked as noted in the initial report where 10 cases developed; there have only been 5 cases subsequently and all these responded well to the administration of Fowler's solution. This same result has been noted by other observers when using large doses, rash being much more prevalent when small doses are used.

It is true that at times patients show evidence of bromide intoxication. All cases must be kept actively about the ward and carefully watched. If allowed to lie down profound intoxication may develop before it is recognized. Bromide should be stopped at once on the slightest sign of symptoms as there is a certain cumulative action evidenced by more pronounced intoxication, at times a day or two following the discontinuance of the drug. Early symptoms are evidenced by a certain drooping of the eyelids, some slurring and indistinctness of speech and early ataxic gait. When these symptoms develop the patients should be kept active about the ward even though they have to be assisted. Much benefit is observed in these cases by the administration of saline by mouth and saline cathartics; in severe cases subcutaneous or intravenous saline is indicated.

It can be said that bromide brings about a return of interest in the field of former activity and that patients are brought into closer contact with reality, the level of consciousness appears to be raised, and while in this condition every effort was made to guide their activities into useful channels, that this was accomplished is evidenced by the fact that many cases did not revert to their former state of idleness, but have remained usefully employed. In most cases, there was no impairment of the general physical health and chronic physical ailments were not aggravated.

One of the indications in the regulation of treatment was the weight of the patient. Of the 129 cases treated in this series, 50 showed a gain in weight, the remaining 79 showed a loss. In only

17 cases was there a decided loss and all these cases were acutely disturbed.

The results obtained in the cases treated were as follows: Much improved, 25; improved, 51; slightly improved, 21; unimproved, 25; died subsequent to treatment, 7. The grouping was made on the following basis:

*Much Improved:* Cases who have not received bromide for a period of 5 to 29 months prior to the end of the observation period. They remained cooperative, industrious, with little, if any, reversion to their former state.

*Improved:* Cases in which decided changes have taken place in the behavior of the patient which can be definitely ascribed to the treatment. If by occasional courses of bromide the patient can be held at a higher level, he is still classified as improved. Most of these cases are employed in constructive work on a limited scale. Of this group 45 have not received bromide from 5 to 32 months, 6 have been continued at intervals.

*Slightly Improved:* This means that the patient is less of a problem than before treatment, and that the degree of improvement is such as can be readily recognized. Many of these cases were vegetative, destructive and assaultive. These tendencies have been improved, they have become less destructive and assaultive and are mostly employed at simple tasks about the ward. Of this group 11 have not received bromide for a period of 1 to 16 months; 10 have required bromide at intervals.

*Unimproved:* Constitutes the cases who showed no appreciable benefit from treatment. In all these cases except one, bromide has been discontinued. In this one case bromide has been given at intervals as it facilitated her care during acutely disturbed periods.

The death rate in bromide cases was much less than the average death rate in the institution. This was no doubt largely due to the fact that the majority of the treatment cases were of a younger and more active type. The average female patient census during this period was 496, of whom 129 received bromide. The total number of deaths was 54, 7 of these being treatment cases. The death rate per 1000 among untreated cases was 128.1 and among the treatment cases, 54.2. There was only one case in which bro-

mide was thought to have a connection with the patient's death. This case became moderately intoxicated and about 4 days subsequently developed bronchopneumonia and died one week later. All the other cases had not received any bromide for at least 6 weeks prior to their death.

In the organic group of 8 cases, 1 fell in the much improved group, 3 in the improved group and 4 were unimproved. In the functional group of 121 cases, 24 were much improved, 48 improved, 21 slightly improved and 21 unimproved. As might be expected, there was not so decided an improvement in the organic group. All that could be hoped for would be an improvement in conduct. Where any degree of actual brain damage had taken place, no improvement was noted.

In the functional group, particularly those having episodes of excitement and depression as in the mental defectives and psychopathic personalities, not only were the periods shortened but they were less severe and the intervals between attacks more prolonged.

The underlying personality of the individual must be taken into consideration as to whether it is of the syntoid or schizoid type. In manic-depressive cases a much more rapid improvement was noted but the results were not so lasting and frequent courses of treatment had to be given to these individuals. In dementia præcox cases, the progress was much slower but the improvement appeared to be more lasting in character. In fact, it has been found throughout that bromide has most effect on conduct and behavior disorders. It is true that we have had more opportunity of watching the reaction in dementia præcox as 105 of the patients treated fell in this group.

An extremely valuable adjunct in the treatment was afforded by the occupational therapy department. Patients under the influence of the drug were found to be more accessible and they were taught useful forms of work, efforts being directed as far as possible along the lines of their former occupation or any interests as expressed by the patient. When work was found to which they were suited, these cases have continued steadily employed, in many instances, without the use of further bromide, have maintained their interests and remained at a higher level mentally. Other cases were found

who displays more interest in the activities of the ward, and by active training many of these also were maintained at a higher level and have made useful workers. No doubt, the question will be asked: Would not these patients have shown equal improvement without the use of bromide, or was not the improvement due to the individual attention and training given to the patient rather than to the drug? I firmly believe that this question must be answered in the negative because these methods had been used on this group of patients prior to their treatment. Patients who could be improved by training alone were not included in this group. However, I do not wish to convey the idea that individual training should not be pushed to the limit in all cases, as it was found that through the new interests gained these patients continued to be constructive rather than vegetative and destructive.

#### CONCLUSIONS

The conclusions arrived at are much the same as those stated in the previous article but are now more substantiated as we have had an opportunity to observe cases over a three-year period. Our present conclusions are as follows:

1. Of the 129 cases treated, 97 showed varying degrees of improvement, 25 were unimproved, and 7 cases died.
2. Of the cases who died, only one was thought to have been even indirectly associated with the treatment, this case having shown signs of bromide intoxication four days before the development of a fatal bronchopneumonia.
3. Of the 129 cases treated, 50 showed a gain in weight, 79 showed a loss. This loss could not be altogether attributed to bromide as the majority of these cases were quite disturbed.
4. Of 86 cases treated in the first series, 10 developed a bromide rash, and 4 of these required at least two courses of Fowler's solution to relieve the condition. Subsequent observations of the total 129 cases treated, showed that only 5 developed a rash and these yielded to a single course of treatment.
5. Many cases who had regressed to the vegetative level were sufficiently improved to become actively engaged in useful work.

Thus the care of even the more deteriorated patients was made much less of a problem.

6. A number of the patients were extremely destructive; they became sufficiently improved by treatment so that they either did not exhibit this behavior or, if at all, only to a limited extent. From a purely economic standpoint alone, this led to a considerable saving for the hospital.

7. In no case was it considered that bromide hastened the progress of mental deterioration.

8. The greatest lasting improvement was noted in the cases which fell in the group of regressive psychoses and so-called conduct disorders.

9. Under careful supervision bromide is a safe form of treatment.

10. From the results obtained in this group, bromide has been shown to be a valuable therapeutic measure.

## OBSTACLES OF FAMILY ATTITUDES IN REHABILITATION OF STATE HOSPITAL PATIENTS

BY MRS. ETHEL B. BELLSMITH,  
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Many of the problems which we meet and the obstacles we aim to overcome in rehabilitating State hospital patients in the family and community, arise from the interplay of various family relationships and attitudes. Briefly, the responsibility of the hospital toward the patient has a two-fold aspect; first, receiving and detaining him for treatment when his condition indicates the advisability of such treatment; second, paroling or discharging him when the maximum amount of benefit has been received. It is the reaction of the family toward these responsibilities with which we are now concerned.

In securing the admission of a patient to a State hospital, the family may be variously motivated. The need for hospital treatment of the patient, who is obviously acutely ill or the need of the family, fatigued by the long strain of chronic care, to be relieved of this burden, may be the predominating factor or we may see several factors working in combination. Deprived of an opportunity to work because of the patient's need of constant supervision and lacking the necessities of life, the adult member of the family may reluctantly accept hospital treatment for the patient as a last resort or we may see the admission of the patient as a final attempt of the family to solve an impossible emotional conflict or situation.

When his parole or discharge is indicated, the relatives' attitude may be colored by their refusal to accept the patient's recovery, thus absolving themselves of responsibility of after care. Conversely, they may desire and be very insistent in obtaining the parole of a patient, when it is quite obviously for his best interest to have continued institutional treatment. Throughout the hospital contact with relatives, their need definitely colors the information that they are able to give. Contradictory statements are frequently made when endeavoring to secure the admission and later the parole of the same patient. The strain and tension have been temporarily relieved, disagreeable factors in the situation existing be-



fore admission, have faded from memory and the family hopes for a better attitude on the part of the patient. Often relatives believe his promises and refuse to accept his mental illness as such with a consequent undue optimism toward the future.

Another influence to be considered is a definite racial belief that the member of the family who is ill should be cared for at home, that the family who permits a member to be committed is failing in the proper attitude toward him and refusing to accept an obligation with consequent disgrace to the family at large. Within the family matrix many factors tend to delay the patient's rehabilitation. Relatives by marriage are often hostile to the person effecting the commitment and unite in exerting pressure on this person to obtain patient's premature parole, thereby working out their own animosity toward this relative. Other more distant blood relatives, usually those who have not had the care of the patient before commitment, insist on assuming the responsibility of parole for him and promptly tiring of this, deliver the patient to the nearest relative to take over the responsibility they have rejected. Financial and economic stresses also condition attitudes and relatives may wish to secure the patient's release, in order that he may supply support that has been temporarily lacking or so that they may obtain control of his small savings or estate. If the patient has a committee, his estate is protected but he may have been in a hospital so short a time that no committee has been appointed or the amount of his estate may be so small that the expense involved in appointing the committee would operate against this. The reverse situation sometimes exists in which the family wishes to return the patient, who is a constant source of expense. If he is to be benefited by hospital care, his return would be approved but if this is desired merely because the relatives wish to relieve themselves of a reasonable responsibility, case work is indicated.

The emotional need of the persons requesting the parole of the patient is perhaps the most important factor to be considered. Are they desirous of obtaining his release because of a feeling of guilt, of a need to punish or sacrifice themselves in service to the patient or is there a need to keep the patient helpless and dependent, in order to find expression for their own over-protective attitude? Is

the need to dominate the situation which includes the patient, the driving force or is the request dictated by the refusal to face a reality situation and the impossibility of accepting the patient at his level? Can we see the patient as a symptom of a total unhealthy family situation and are the various members using the patient as a release for their instinctual drives? What does the patient's illness mean to them? To what extent is the patient being used as a substitute by the relative who in early life was emotionally deprived or rejected? Is there a hope that the patient will return home and be the successful person he formerly was, thus guaranteeing economic security for the family?

In the case of a male patient, is the wife in a state of conflict because of a desire for continued security for herself and children derived from an adequate relief allowance and a feeling of guilt in not being more insistent about taking her husband home? If in the past the wife has experienced, during attacks of excitement, physical violence from the patient toward herself and children, or he has had irregular employment with long intervals of inadequate support for the family, she may be apprehensive regarding the future and the probability of other attacks of mental illness. Where formerly, mothers' allowances or pensions were terminated at the time of parole, public and private agencies are now in many instances, continuing their assistance throughout the parole period or during such time as the superintendent of the hospital may recommend such action. We cannot pay too great tribute to the assistance given the families of patients during the period of hospital and of parole treatment, by case working agencies and due consideration should be given to the recommendation of the agency when the parole of the patient is being considered. We are all familiar with the damage done in a family situation by the premature release of a patient. There is a group of patients, who have brief attacks with complete recovery and must, therefore, be paroled or discharged, even though the normal interval may be very short duration. The disturbing effect on the children in the home of the repeated commitment of a markedly psychotic and disturbed individual and his speedy release when his symptoms have subsided, cannot be estimated. If the mother is the patient, the children may

be placed frequently with various relatives or in institutions for temporary care with constant adjustments to be made to new mother substitutes and new situations, returning home after a short interval to repeat the same destructive experience. If the patient be the father and an allowance is granted during his absence, the situation is not quite so difficult. There is some permanence in the family life but lacking a father substitute or having a psychotic or alcoholic father, the children must be assisted in developing a satisfactory father relationship.

The problem of repeated pregnancies in a psychotic wife or by a psychotic husband is a matter of deep concern to society and we would be interested to know what becomes of these children later. How many does society support in childhood in institutions or foster homes and in State schools and hospitals in adult life?

There is the attitude of the children who have taken over the patient's economic responsibility. What does this mean to the children, to have the mother dependent upon them? How does the return of the father affect this situation? Can the children accept displacement without a threat of insecurity in the relationship with the mother? What, in turn, is her attitude toward the children? If she married for financial security and the patient failed in providing this, how can she accept an unsuccessful husband? If her expectations have been realized in the interval through her children, how has the illness of the patient affected her relationship with him? If alcohol or syphilis was a causative factor, what mental tension over these factors exists and can this be removed?

In the cases of children or young adults, who are patients in the hospital, what feeling of responsibility do the parents have for the patient's illness? Do they blame themselves on the basis of heredity, early neglect or improper training? If not, and as a projection of the parents own needs, they demand scholastic ability and success from the child, how can they accept the apparent failure of the patient to live up to this demand?

The degree of illness definitely affects the attitude of the family. There may be uncertainty as to the future, possible or probable recurrence of illness, definite deterioration or a gradual reduction of the patient's ability. Much work has frequently to be done

because of information previously given by persons in the community or officials of other hospitals. If the family has been informed that the patient will not recover and then some months later, is faced with the situation of receiving the patient, sufficiently improved to be at home, what can be done to relieve its doubt in the face of conflicting medical opinions and can it accept the difference in the situation with a possible revision of the diagnosis and prognosis? A feeling still exists in many communities of disgrace or stigma attached to mental disease. How can we work out these problems with the family?

These are a few of the many problems which face the State hospital social worker in attempting to work with a situation, including the patient and the family. If understanding can be built up by discovering the factors operating, by learning how much the relatives can accept, by interpreting this to them, by relieving tensions, by lowering the demand of the family, thereby decreasing the burden on the patient, we can expect that the patient may make a better adjustment during his parole than he made before his admission. By explaining the patient's symptoms to the family as a striving for satisfaction, as an effort to work out his own instinctive urges, we can show the family that some of the behavior problems and conduct difficulties are the result of misdirected energy or an effort by the patient to solve a conflict or a disagreeable situation. If we can show relatives that their demands have been too rigid and they can accept this, the worker has made a definite contribution to the situation. If the family can realize why the patient developed this illness, that his reactions have a definite purpose and meaning for him, the situation will not be as difficult for him when he leaves and makes another attempt to take up the duties of life in a family. The stimulation of family affection and loyalty, the development of mutual interests, the substitution of other activities, the working for an ultimate goal rather than an immediate one, often assist in working out a successful relationship between the family and the patient. Identification by a responsible member of the family with the social worker in an effort to work through to an understanding and acceptance of the limitations of the situation, is sometimes of assistance and frequently enough security can

be found in the social worker to carry the family through an acute situation. There will always be cases, where the authoritative method of working is necessary, where the family feel the need to be told certain definite specific information, where complete understanding cannot be secured and where faith in the hospital and its staff provides the incentive to follow instructions.

There are some situations in which a compromise must be worked out. Perhaps it is wiser for the patient to live away from the family during his parole period. It may be that placement in a congenial job and life in a boarding home with members of his own sex may be more acceptable to the patient. The transition from care and treatment in the hospital to normal living in a community on adult level is sometimes too difficult for the patient and he would do better employed in an institution where his physical and material needs are met and he does not have to face the demand of budgeting his money and planning his expenditures. Helping the family to face the situation and to realize that the patient should have an opportunity to live his life in the way that best fills his needs, and is at the same time socially acceptable, is often a difficult matter. Supplying satisfying situations and successful contacts to the patient and to the family may overcome some resistance in this matter. Helping the family to realize that the constant conflict attending the denial of a situation requires corresponding output of energy with no solution of the problem, is a practical demonstration of mental hygiene.

Throughout all these various techniques of treatment, certainly maintaining an objective attitude toward the patient and his family would seem to be the first requisite. We must be sensitive to the need of the family, ready to let the members work out their plan with such assistance as is necessary, and able to fill the need of the patient by enabling him to think out the situation and what it means to him. If we can gain the confidence of the relatives so that they feel that we really understand their problems, that these problems are not peculiar to them but to many others in similar situations and if we can take what they have to offer and through that work out an acceptable plan for the patient, we will make more rapid advance than if we endeavor to impose a plan we have made for them

without their active participation. If in doing this, we constantly remember that pleasant and successful experiences are constructive, and that frustrating and disagreeable ones are the reverse, praising good results and, as far as possible, ignoring failure, stimulating and encouraging to further activity without expecting too much, some measure of success may attend our efforts.



## BOOK REVIEWS

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**The Principal Nervous Pathways.** By A. T. RASMUSSEN, Ph. D. The Macmillan Company, New York, 1932.

Professor Rasmussen, drawing upon a long experience in anatomy and the teaching of medical students, has accumulated a series of charts and diagrams of the more important systems within the nervous system and has supplemented these by excellent condensed descriptive material. The charts are well annotated and well supplied with legends. First there is a short chapter on the relation of the meninges to the brain, spinal cord, and cerebrospinal fluid. Then a page describing briefly the various neurological staining methods is given. Following these two brief descriptions a series of figures and descriptions of the more important systems is given. These include pain, temperature and light touch conduction, tactile discrimination and deep sensibility, the vestibular or equilibratory system, the auditory system, the mechanism of binocular vision and reflexes through the midbrain, localization of fibers from the retina to the visual cortex, the innervation of the eye, the general visceral afferent system, the respiratory system, the olfactory system, the corticobulbar and corticospinal system, the fiber connections of the corpus striatum, the chief efferent tracts and their relations to the lower motor neurones and the final common path, the cranio-sacral division of the general visceral efferent system, the thoracico-sacral division of the general visceral efferent system, the thoracico-lumbar division of the general visceral efferent system, and finally, the innervation of blood vessels.

As the author himself states, many debatable points have been omitted due to the demand for space and simplicity in teaching. However, the tracts and appended brief descriptive notes supply the medical student or elementary student of neurology with a well schematized plan of the more important neurological systems.

The author feels that this division into various systems serves a functional purpose in addition to pure anatomical grouping. He feels that the student acquires a sense of functioning when all the connections of one system are taken as a whole.

One may well agree with Professor Rasmussen's statement that "It is quite generally recognized that in no other division of anatomy is it so necessary to correlate function and structure as in the nervous system." But then it may be asked how much of a functional element has really been

introduced by a mere anatomical grouping of nervous structures associated because of structural continuity with the passage of a certain type of impulse. For the teaching of anatomy this is excellent. But anatomy does not tell us function. It acquaints us with the possible pathways over which nervous impulses leaving one point may reach another. It would seem that the important part of a functional or dynamic approach to neurology, especially when applied to the clinic, would be the ascertaining of the behavioral changes in the organism associated with passage of a group of nerve impulses along certain pathways. The clinical manifestations of interruptions of many of the secondary connections of many of the systems, such for example as the vestibular or even pain and temperature and particularly the corpus striatum are far from being known and they will not be derived from anatomical studies alone. Anatomy of the comparative type supplies us with an insight into common anatomical elements in various species but it does not supply us with an insight into the functional significance of a lesion of a certain central pathway in a certain species. We know well, for example, that lesions of similar areas in different animals, such as the cat, dog and monkey, may be followed by quite different clinical symptomatology. A sufficient understanding of the functional significance of the many connections of these various systems can only be obtained, it would seem, when a comparative anatomy is supplemented by a comparative physiology and the medical student must be well acquainted with the fact that his so-called "functional" conception of a certain system is only true in a very limited sense of the term and that he will not in many cases be able to derive either the clinical symptomatology from a study of the anatomy or vice versa especially when the lesion is of the secondary or central neurones.

Professor Rasmussen's book, however, is predominantly an anatomical work and as such will be welcomed by the student of medicine or the non-medical student of neuroanatomy.

S. E. BARRERA.

**A Thousand Marriages.** By ROBERT LATOU DICKINSON and LURA BEAM. Foreword by Havelock Ellis. 482 pages. Price \$5.00. The Williams & Wilkins Company, Baltimore, Maryland.

This book is one of a series on the medical aspects of human fertility issued by the National Committee on Maternal Health, Inc. During the past eight years this committee has sponsored many studies, issued over 80 reports and published, or is about to publish, a dozen books relating to some phase of the sex problem.

The volume before us sets forth data gathered by a gynecologist during 47 years of active practice. The material available comprised 5,200 histories of women patients. Separate sheets for sex histories had been made in 1,200 cases. The histories are classified and tabulated in various ways and detailed descriptions are given of many interesting cases.

The work has five parts with a total of 20 chapters. Part one is entitled "Sources, Methods, Theory, Norm"; Part two, "The Beginning and the Extremes"; Part three, "The Affirmative"; Part four, "The Negative"; and Part five, "Interpretation."

The histories cited show remarkable variation in sex adjustment and in emotional attitude toward the problem. Complications of many kinds are discussed but little is said about treatment; primarily "the book is a treatise on *diagnosis*, a medical study of symptoms of disorder, not therapy."

For all physicians who have to do with family relations, and for social workers who deal with problems of marital adjustment, this book should be of great value. It throws new light on an old, old problem which formerly was veiled by secrecy and shrouded by darkness.

POLLOCK.

**The Affective Consciousness.** By H. H. BRITAN, Ph. G., of Bates College. 391 pages. \$3.00. The Macmillan Company, New York.

The affective life has had no systematic treatment since Ribot's "Psychology of the Emotions," 1889. It is probable that no phase of the mental life has been so poorly studied as that of the affective consciousness, and Dr. Britan's contribution to the subject should receive special attention. He has viewed the subject in wide relations. Singularly enough he has no chapter on the feelings as such, only emotions being specifically discussed. He deals particularly with the dynamic function of knowledge and the inter-relation of affective, cognitive, and volitional components of the mind and behavior.

"The Affective Consciousness" is critical as well as constructive. The affective and cognitive aspects of consciousness are shown to be complements of each other, but the affective aspect is viewed as the impulse to action, the dynamic that completes the fact of information and turns it into action. The "drive" for action we find in the affective consciousness in all its forms. Habit is viewed as resulting from tendency to repeat pleasurable affected experiences. Britan certainly falls into traditional fallacy, however, when he says that the problem of habit can be localized in the synaptic connection between the neurons, and that synaptic resistance is

decreased with *use*. Lashley and other experimenters now show that there is no known function of the synapse, and Tiegs demonstrates that there is syncitial instead of synaptical connections of the neurons. The inferred implications of the synaptical theory, which have been reiterated generation after generation, are pure mythology and it is tedious to find it repeated uncritically almost everywhere.

The author does not draw the distinction between sensation and affection as strongly as we could wish. He recognizes that the distinctively human element in man's behavior is not reaction to stimulus but the attainment of purposes, that our reactions are organized and coordinated to such ends, and that the condition of the organism as a whole plays a vital part in determining what the reaction will be. Mind at its best is purposive; it foresees certain results and sets itself for their attainment. When stimuli are integrated into perceived objects, some radical modification of the affective mechanism occurs; reaction is no longer to a sensation merely as a form of sense stimulus, but to an object as such, and the reaction becomes one of a distinctly higher type. To make life possible, a device of avoidance of pain before the unpleasantness arises was necessary; call it instinct or what you will, the organism is so constituted that it reacts adaptively before experience can have informed the individual of the possible consequences.

The chapter on emotions proper is definitely a review of various conceptions of them, with no distinctly new or constructive theory. The discussion on the function of the emotions is one of the most useful chapters in the book. It is shown that emotions are excited by object and situations, by sympathy, and by mental imagery and ideas. Criticism of the James-Lange theory of emotions and constructive notions as to emotional functions are of weighty consideration.

The first eight chapters of the book are basal, the remaining being spheres of practical application of the affectional consciousness. The contents of the work include: The motives of men, the motive value of knowledge, habit, pain, pleasantness and unpleasantness, differentiation of the affective consciousness, the emotions, the function of the emotions, fear, affective significance of language, imagination and the emotions, social stimulation of the emotions, ethical emotion, esthetic emotion, religious emotion, emotional attitudes.

Dr. Britan has written his work in a clear, forceful, and beautiful style which is rather unusual in literature of this character. The book is a useful contribution on the subject.

GEORGE S. PAINTER.

**Preventive Management: Mental Hygiene in Industry.** Edited by HENRY B. ELKIND, M. D., and published by B. C. Forbes Co., New York. \$3.00.

The slip cover states this book is, "For the Executive," and is a symposium, the contributors including such well known authorities in this field as V. V. Anderson, Abraham Myerson, Karl M. Bowman and others. All are recognized as combining psychiatric skill with an understanding of the problems in business and industry.

Dr. Elkind in his foreword tells us the book originated through adapting material used in lectures given under the auspices of the Massachusetts State Department of Education in 1930. The various chapters, by different men, have been so developed that the subject is first approached in a general manner by Meyer Bloomfield, who shows that there is a decided trend toward the use of scientific application of the principles of mental hygiene in the relation of employer to employee, with mutual benefit to both and to the profits of work.

Succeeding chapters grow more and more specific, case after case is cited to show results attained in the office, shop and store. Major and minor executives, managers and foremen as well as the bundle clerk, machine hand or cashier are shown to require the tuning and polishing effects of mental hygiene. Due to the fact that each man was writing on practically the same subject, there is at times a duplication of ideas, but there is not a dull page in the entire volume.

It seems to the reviewer to be a valuable addition to the literature on mental hygiene and should be in the library of all State hospitals, especially for the benefit of those working in clinics. It is couched in non-technical language, so will appeal to the average executive and loses nothing so far as the expert is concerned.

More than a decade ago the reviewer, while conducting hospital clinics, attempted to get the managers of various shops in his district interested in contacting with us when they had, "problem men," working for them. Scientific management was known and recognized as a valuable adjunct but the prejudice against anything savoring of State hospitals was too great and very little was accomplished. It is doubly interesting, therefore, to find examples quoted in these pages representing exactly the few problems met at that time.

The title suggests that emphasis is laid upon the preventive side of the problem and no one can read any chapter without appreciating the value to industry, business, even the professions, of a good understanding of the principles of psychology and mental hygiene. The production curve of any

worker, in any field will show the benefit obtained by proper placement where he is contented and free from emotional stress.

As V. V. Anderson sees it, "Personnel work must start with a thorough-going knowledge of the personality of each individual worker, as well as a detailed study of the job environment into which he is placed, and so organize these processes concerned with production, employee development and supervision as to accomplish in each individual instance the most effective results for both employer and employee."

It would seem the editor has made a wise selection in picking his contributors. Each chapter is preceded by a thumbnail sketch of each author which not only indicates his qualifications but gives a brief bibliography of his previous contribution on this and allied subjects.

Finally, there is appended several pages of, "Selected Readings," which should be helpful to any earnest student.

GRAY.

**The Craving for Superiority.** By RAYMOND DODGE, Professor of Psychology in Yale University, and EUGENE KAHN, Professor of Psychiatry in Yale University. 69 pages. \$1.50. Yale University Press. 1931.

A feeling of superiority is present in nearly all human beings, both normal and abnormal, but the difference between feeling and fact may be very great. This book discusses the various aspects of the individual struggle for superiority over environment and the psychological problems which are involved.

The contents include discussion of relativity of superiority and inferiority, natural history of values, organic and purposive adjustments, craving for superiority, uniqueness of each personality, instability of the craving for superiority, craving for the feeling of superiority, variability and change, time.

The aim of the book is to promote, not only a better understanding of an important group of mental phenomena, but also a more comprehensive and precise description of these phenomena, and sounder practical systems which take them into account. Various types of superiority and inferiority are considered. It is admitted that time eventually overrules all human matter-of-fact superiority; death grasps all of us. Man however seeks to triumph even over time, and like Socrates has no fear of death. Superiority over time is one of the great services of religion. Such feeling of superiority over man's greatest enemy—time—is his supreme triumph.

GEORGE S. PAINTER.



**The Mind in Action.** A Study of Motives and Values. By A. CAMPBELL GARNETT, Litt. D. 223 pages. D. Appleton and Co., New York. 1932.

Dr. Garnett, who is professor of philosophy at Butler University, writes from the standpoint of "self-psychology." As indicated in the title, motivation and values are stressed.

The first explanatory principle in the study of motivation is "That every living organism, so long as it is conscious, constantly seeks to express itself in ever-changing activity." This sounds dangerously like saying that that which produces activity in the organism is the fact that the organism is active. The primary human motives are aversion to or escape from, sensory pain, appetitive pains or pains of unsatisfied wants, and from the emotional pains arising when a natural impulse or instinct goes unfulfilled. Appetites and instincts are discussed at length, "instinctive" motives being innate, occasional psychological ends, while the appetitive are innate, periodic, physiological ends.

In connection with control of instincts, sublimation is held to be unnecessary due to the fact that an instinct is not aroused until stimulated. Therefore, the simpler solution is not to allow it to be stimulated.

Gestalt terminology is used to a slight extent, but to no very apparent advantage. For example, play is explained as based on an unstable cognitive configuration of lived experience which undergoes a change, due to the innate activity of the mind. Physiological aspects of play are ignored.

"Feeling" (pleasure or pain) is distinguished from emotion, and the author rejects the theory which he attributes to McDougall that every instinctive impulse is accompanied by emotion. He agrees in part with the James-Lange theory in that "emotion is emotional just in so far as it arouses organic and skin sensations . . ." The function of feeling is to direct the activity produced by the motivation. ". . . activity, further, is always purposive or teleological, in the sense of being forward-looking, anticipatory of new experience."

Chapters 4 and 5 are devoted to a discussion of instinct in which the author feels that he differs with McDougall as to criteria of instinct, but in which he appears to use practically the same categories as the latter author, though with less careful organization. Chapter 6 treats of habit and sentiment, in which habits are regarded as secondary. Sentiments are similar to those of McDougall, but are explained as "brought into existence through an acquirement of meaning on the part of . . . the self. . . ."

The remainder of the book, Chapters 7, 8 and 9, is devoted to material of a more distinctly philosophic tone, as indicated by a few of the headings as follows: Moral conduct, the higher values, truth and beauty, harmony, the key to reality; the meaning of religion; good and bad religion, etc.

In short, an innate, constant activity of mind is the fundamental explanation of human and animal behavior; Gestalt terminology, and terminology of the British School of psychology are used; there is a presentation of instincts very similar to that of McDougall's, and the remainder of the book is devoted to a moralist's discussion of moral conduct, reality and religion.

T. W. FORBES.

**Mental Nursing (Simplified).** By O. P. NAPIER PEARN, M. R. C. S., L. R. C. P., D. P. M., Deputy Medical Superintendent, Cane Hill Mental Hospital. Price \$2.00, net. Published by William Wood and Company, New York.

The book is a compend of the subjects studied by nurses in mental hospitals. The subjects are treated in a short and simple manner. It is not meant to take the place of the more detailed textbooks but serves adequately as a review for examinations. A great many code words and doggerel are used to assist the student in memorizing the subject matter; e. g., poisons are divided into five heads using the code "Never chew gum in church"—narcotics, corrosives, gases, irritants, convulsants. In discussing "Fats" stating where the normal fats are found the following code is used: "Mr. Baldwin likes smoking on duty"—milk, butter, lard, suet, oily fish, dripping.

The author gives the signs and symptoms of fever as follows:

The patients are thirsty, have no appetite,

Their tongues are brown coated (at first they were white).

Respiration and pulse are both faster in rate,

Constipation is usual, we also should state.

The urine is scanty, its color is high,

The skin, as a rule, is burning and dry,

Many have headache. There also are some

Who, if fever is high, have de-lir-i-um.

The following subjects are reviewed: Anatomy and physiology, first aid, hygiene, sick nursing, pathology, nervous system, psychiatry, mental diseases and disorders.

The book aids the student to memorize the details of the different subjects of her curriculum and is written for English nurses. The chapter on "Mental Diseases and Disorders" does not follow the American classification, but apart from this it is suitable for State hospitals as a review. However, there are a great many practical suggestions for nursing care of mental patients. The book is written in such a lively and interesting manner that it can be used to advantage by State hospital attendants as well as nurses.

HAROLD H. BERMAN.

**Psychology in General Nursing.** By ISABEL G. H. WILSON, M. D., D. P. M. Published in the United States by Longmans, Green and Company, New York City.

The book is based upon a series of lectures to nurses given at the Tavistock Square Clinic. It is delightfully written and enjoyable. The author expresses her ideas in very simple and understandable English. She has avoided the use of technical terms. The book fills the requirements of nurses in general hospitals. It conveys to the nurse the idea that the patient coming to a general hospital has as well as a physical illness a personality which must be recognized. It impresses upon the student nurse that the physical sickness which is being treated has a setting in a human being and that it is not only the physical sickness which must be taken care of but that the individual as a whole must be given attention.

In Chapter I, "Links Between Body and Mind," the author goes into great detail to explain consciousness and the special function of the higher nerve centers and the reaction stimuli. She states that we do not know what the link is between soul and consciousness, mind and body, brain and thought, science and God. We do know, however, the results of the change which takes place as the result of stimulating certain parts of the body. She then divides the links into five groups consisting of (1) the central nervous system, (2) the autonomic nervous system, (3) the endocrine system, (4) the vascular system, (5) the effect of physical unusualness upon the mind of its owner." There is contained a good account of the fear reaction as well as organ inferiority.

In the second chapter, "Linked Symptoms in Body and Mind," the author discusses palpitation and anxiety, worry and indigestion, constipation and depression, sepsis and confusion, fear and diarrhoea.

There are in all ten chapters.

Chapter V, "The Mind of the Patient," gives a very good picture of the sick individual, comparing the behavior of sick adults to that of sick children and their childish behavior, with some advice as to how the nurse should handle this problem.

Chapter VI, "The Mind of the Nurse," goes far in explaining the attitude the nurse should have toward patient, the hospital and herself.

Under "Hospital Difficulties," Chapter VII, the administrative policies of general hospitals are discussed, such as the necessity for using the hospital as a teaching center for medical students, the sleeping hours of patients, preparations for operations and the assistance that the nurse can render in the difficulties which the patient is facing.

Chapter VIII, "Functional Nervous Disease." In this the author discusses psychoneuroses but only briefly.

In reviewing a book of this nature it is difficult to give a complete longitudinal section of it, but the book fulfills its purpose, and the student nurse reading it will be benefited accordingly.

HAROLD H. BERMAN.

**The Use of the Self.** By F. MATTHIAS ALEXANDER, with an introduction by John Dewey. 143 pages. \$2.00. E. P. Dutton and Co., New York. 1932.

In this book, the author gives us a detailed account of the experiences and of the resulting experimentation which led him to discover that the *sensory* appreciation (feeling) connected with the direction of the use of the self has become untrustworthy, and so to develop the technique for the building-up of *conscious* direction of use which he has employed in London for 40 years. He shows by concrete examples the influence of use upon functioning and the bearing of the direction of use upon the control of reactions and gives details of an educational procedure which involves a reuniting of thought and action together with experiences of sensory trustworthiness.

The author thus shows that the sensibilities are not always trustworthy, and that we often do from long habit just the reverse of what we suppose we are doing. The false use of the organism results in malfunctioning and various complications, and the aim is to correct these failures by reconditioning the reactions. He presents a case of stuttering, which he thus reconditioned and overcame, as an example of the conditions and technique of treatment. He also discusses diagnosis and medical training, in which he points out that medical education lacks the fundamental need of understanding the precondition of many forms of diagnosis. His work has won recognition of the medical fraternity, and a school has been endowed by friends of the movement for training teachers and practitioners in his technique. The work seems like a new field of science.

In his "Introduction to Constructive Conscious Control of the Individual," Professor Dewey writes: "Mr. Alexander has demonstrated a new scientific principle with respect to the control of human behavior, as important as any principle which has ever been discovered in the domain of external nature."

GEORGE S. PAINTER.

**Dreams and Personality.** A Study of Our Dual Lives. By FREDERICK PIERCE. 336 pages. D. Appleton and Company. \$3.00.

This book is the result of case studies of hundreds of dreams, from which the author selects 18 interesting and significant types for detailed study. In each of these type cases, which range from financier to farmer, from society women to girl of the slums, the sleeping mind is minutely explored through dream analysis and contrasted with the same mind when awake, each being rich in human interest. Based upon analytical psychology, the work deals with dreams and the sleeping personality as revealed through their interpretation. It seeks to show that nearly all persons lead dual lives, awake and asleep, and aims to be an authoritative scientific revelation of the difference between the waking and the sleeping personality.

The outstanding characteristic of interest in the work is the fact that the author holds that one of Freud's major contentions regarding dreams is unfounded, namely, that dreams are indicative of wish fulfillment. Although some dreams may have in them this element, the author finds it infrequent, and challenges Freud's rather bizarre interpretation of dream life.

The introductory chapters on "The Gateway to Dream Interpretation" and on "The Method" of investigation are interesting material to the psychologist, as well as the "Summary and Conclusions" which the author reaches. The author's acceptance of the Freudian "symbolism" or an analogy to it may be questioned. Symbolism in general allows such vague and bizarre caprices of the individual interpreting mind as to admit of little standing. Without full scientific validity, it seems questionable whether such device is edifying or even illuminating by way of making dreams intelligible.

The book is a genuine contribution to the subject of the sleep state and is welcomed.

GEORGE S. PAINTER.

**Human Sterilization.** By J. H. LANDMAN, Ph. D. Pp. 341. \$4.00. The Macmillan Company, New York.

Professor Landman calls his work the history of the sexual sterilization movement. He begins with a brief discussion of the eugenics movement and of statistics of mentally incompetent people in the United States and follows with a summary of legislation in the several states, the important and controlling court decisions and the present legal status of sterilization.

Considerable space is devoted to the nature of the socially inadequate, the



heredity of psychotic and mental deficiency traits, and a critique of eugenics. This last is the most effective part of the work. The shafts aimed at the eugenicists, both pessimistic and optimistic, and at the studies of pedigrees, certainly reach vulnerable spots. The question of the transmissibility of mental traits under the Mendelian Laws is discussed and several points of view are presented. The socially inadequate are everywhere. Is the condition inherited or acquired? If the latter, how can we assume that such persons are the potential parents of socially inadequate offspring?

A brief description is given of the surgery and the effects of human sterilization, followed by a careful discussion of human sterilization and social policy, including motives for sterilization, persons subject to compulsory legal sterilization and problems in the administration of the laws.

There are valuable appendices, a full bibliography and an index. Much use is made of material from the statistical bureau of the New York State Department of Mental Hygiene, and the Federal Bureau of the Census.

The author has permitted a curious error (page 19) to creep into his interpretation of Census Bureau data regarding psychotics. He says that our foreign-born population of approximately one-eighth of the total contributes nearly seven-tenths of the total psychotic cases, or five times as many as they should have! Yet the figures he uses show plainly that they contribute but three-tenths, or a little more than twice their proportionate representation.

The author is not pleading a cause and as a good historian should, tries to be impartial. Nevertheless one gathers that he believes human sterilization has a definite, though sharply limited, field of usefulness in our present state of knowledge.

A definite recommendation is made for a department of eugenics and eugenics in each state to guard the community against the procreation of socially undesirable people and to assist the unadjusted (socially inadequate) people in society. Such a department would be given powers sufficient to enable it to enforce sterilization through local court proceedings and make use of existing welfare agencies for the adjustment work. To the reviewer it would seem that the case for sterilization is distinctly not proven but such a department under ideal conditions might render a real social service to the unadjusted; on the other hand, under the practical conditions more likely to prevail, the officious activities of such a department would make it an intolerable nuisance. If New York State decides to undertake this public activity it would seem wise to place the work under the existing department, of health, mental hygiene or social welfare.

FARRINGTON.



**Behind the Door of Delusion.** By "INMATE—WARD 8." 325 pages. The Macmillan Company, New York. 1932. Price \$2.00.

This book, printed anonymously, is said by the publishers to have been written by "a bright newspaper man, a welcome speaker at luncheon clubs, and an active figure in civic affairs," who was committed to an unnamed State hospital as a dipsomaniac in the hope of effecting a cure. It is dedicated by the author "to a better understanding of those on the inside by those who are not yet locked in." He describes his experiences in the institution from the hour of his admission until he is presumably about to be discharged at the end of a year. The author is not a propagandist nor a reformer; on the contrary, his attitude towards the institution and those in authority is, in the main, friendly and he evidently started out with the purpose of presenting a plain and unbiased narrative of the daily happenings in the admission ward of this institution and his reaction to them from the standpoint of an inmate. In attempting this, however, he is obliged to labor under the handicap of having been a newspaper man and it is impossible for him to present his narrative without embellishments intended to maintain the interest of the reader. He introduces a number of characters, which he portrays in some detail, as the case of the girl, "Joan," "John Doe, the mystery man," "Whiz-bang Mabel," "Rudd" and "Joe." It is to be hoped it is for this reason also that so many incidents of disorder and violence are described as taking place in the reception ward and in which fellow patients were permitted to assist the attendants in controlling their disorderly associates and even to initiate coercive measures.

Many of the author's experiences were distressing, some of which have been spared him, yet his narrative is singularly free from anything like a paranoid attitude and he accepts his experiences as unavoidable incidents in an organization too large for much individual attention. One of the things that troubled him most in the beginning of his stay in the hospital was his inability to be alone—to escape from hearing the talk of other patients. "They flung their obsessions at me almost continually. If I got up and escaped to the exercising porch, they followed me, kept stride for stride with me and continued to talk. I could not shake them off or discourage them and this constant drumming of distorted ideas against a person's brain is the most insidiously appalling thing that I have yet found about life in an insane asylum. Mental influences are not even given consideration in our present-day handling of the insane." (*Sic.*)

The book is well worth perusal by hospital physicians. From it they will learn much of the point of view of the patient, narrated by one who has himself been a ward inmate and has the ability to present the subject in a readable way. They will also learn of many things that should be avoided.

HUTCHINGS.

**On the Meaning of Life.** By WILL DURANT. 144 pages. Ray Long & Richard R. Smith, Inc., New York.

This small book consists of answers to an important question, i. e., *what is the meaning or worth of human life*, which was asked by Will Durant of various persons of national and international importance, including intellectual leaders, scientists, financiers and others. Mr. Durant's own answer is a pessimistic contribution full of disillusionment and almost despair to the effect that the greatest mistake in human history has been the discovery of truth, because it has neither made man happy nor free and it has deprived him of every reason for existence except moments of pleasure.

Not all answers were in this pessimistic strain. Those by Abbe Dimnet, Mencken, and interestingly enough, Helen Wills, are among the best. As an appendix to the book a surprisingly interesting letter is from a fourth-offender in Sing Sing Prison, Number 79,206, which answers Mr. Durant's pessimism in a highly worthy manner. The book offers an interesting commentary on the meaning of life by some persons prominent in world affairs. This question has a relationship to problems of mental health and psychiatry.

BROWN.

**Mental Healers.** By STEFAN ZWEIG. 363 pages. The Viking Press, New York.

This book offers a richer reward to the reader than might be expected from the somewhat inadequate title. Linking Mesmer, Mary Baker Eddy and Freud in a symposium does not suggest very fruitful results; however, the influence of these persons upon modern psychological medicine is intelligently, even profoundly discussed. Mesmer, a man of broad culture and intellectual accomplishments, despite his obsession by a single idea, was a forerunner of modern psychotherapy. The author deals with Mesmer sympathetically. But not so with Mary Baker Eddy, although the weight of her personality and the importance of her accomplishments are clearly set down—accomplishments arrived at in some instances by questionable methods if one is to judge by this work.

The survey of Freud's work is sympathetic and comprehensive. The author states that it is not relatively important to posterity whether or not Freud has made a number of mistakes in his teaching; nor is the success of his method of treatment for patients suffering from nervous disorders his greatest accomplishment. His greatest contribution has been in demonstrating to a somewhat reluctant world the errors and stupidity in its Victorian attitude toward all things relating to sex. According to the author this accomplishment modestly and sincerely offered to the thought of the times in which he lives is Freud's most important contribution.

BROWN.

**The New Behaviorism.** By JOHN B. WATSON. W. W. Norton & Company, New York. 1930. 308 pages. Price \$3.00.

Watson's "New Behaviorism" is only the "Old" Behaviorism with some new pages of material added. We believe it to be impossible to give in a brief way a criticism or satisfactory review of a work by Watson who specifically denies the fact of consciousness and holds that "belief in the existence of consciousness goes back to the ancient days of superstition and magic." If there be no such thing as consciousness, then how can we intelligently interpret a single page of this book so as to mean anything to anybody; the most we could hope to do is to go through certain motions, none of which would have any meaning or value. For example, Watson says, "Magic lives forever." But what is *magic*, in a world of unconsciousness? Magic is usually considered an erroneous belief, and "belief" implies conscious ideas and meaning; but since there is no consciousness, there can be no belief, ideas, or meaning; there can be only motions, and there is no way to know that motions that are designated *magic* are any different or of any different value than those called *behaviorism*.

Again, Watson professes to proceed wholly by the objective method, to rule out everything which does not admit of experimental demonstration; yet he contradicts this principle on every page when we try to scrutinize the implications of his own words. For example, he says, "No one has ever touched a soul, or seen one in a test tube, or has in any way come into relationship with it as he has with the other objects of his daily experience." The implication is that nothing exists except what can be seen with the eyes and handled with the hands. Yet in the next breath Watson declares that the behaviorist works like any other scientist. "His sole object is to gather facts about behavior—verify his data—subject them both to logic and to mathematics (the tools of every science)." Yet no one has ever touched logic and mathematics, or seen them in a test tube, or in any way come into relationship with them as he has with the other objects of his daily experience. That is, *logic* and *mathematics*, "the tools of every science," are infallibly subjective and mental after all, and have absolutely no existence apart from consciousness. Behaviorists have a peculiarly incurable type of monomania. Watson says that the behaviorist "dropped from his scientific vocabulary all subjective terms, such as sensation, perception, image, desire, purpose, and even thinking and emotion as they were subjectively defined." Yet on almost every page of his work, these terms are repeatedly used. Presumably the reader is expected to read into them some meaning, who can say what? Thinking is declared to be only *talking*, and the talk-

ing must be without *meaning*, since meaning is an intelligent, conscious, *mental* affair. Such are the theoretical aspects of this work.

The treatment of "The Human Body" contains extensive following of Jennings "Biological Basis of Human Nature" and includes the usual anatomical and physiological data which are well known. We find ourselves in harmony in the main with Watson's discussion of the problem of human instincts, and inheritance of mental traits; he has done vital work in experiments with human young, which has resulted in valuable knowledge. Watson's studies in emotions, as to what emotions we are born with, how we acquire new ones and lose old ones, and the experimental work in the field in general, is of great interest and value. His study of "Our Manual Habits," how they start, how we retain them, how we discard them, and the experimental cases by which certain conclusions are reached is an interesting contribution to knowledge of behavior. The chapter on "Talking and Thinking," in which thinking is declared to be only talking, Watson claims, when rightly understood, goes far in breaking down the fiction that there is any such thing as "mental" life. He discusses a chapter on, "Do We Always Think in Words"? The final chapter on "Personality" presents the thesis that our personality is but the outgrowth of the habits we form.

GEORGE S. PAINTER.

**The Structure of Insanity.** By TRIGANT BURROW, M. D., Ph. D. Psyche Miniature Series. Kegan Paul. London, 1932.

It is next to impossible to give the general reader an idea of this miniature. It is written in involved physiological language which few readers will comprehend. Reduced to something like the intended meaning, the theme seems to be to contrast the objective method of science with acquired subjective opinions or ideas about things. The author says: "There is now needed the scientific observation of material *within* the observer himself." The mental self is characterized as "the social substantive *I* as representing the sum or whole of the cerebral" system, in contrast to the organism as a whole. The partitive or symbolic mechanism of attention has its seat chiefly in the cerebrum; the systemic or integral attention of the organism as a whole extends through the centers of the diencephalon and medulla and ramifications of the sympathetic and vagus nerves.

The underlying premise of human conduct he assumes rests unconsciously upon the projected affect-alternative of "right and wrong." "The observational background of all individuals is made up of restricted, partitive

habituations." This is not a moral fault but the unavoidable condition of habitually disordered attentive process. The doctrine of the author seems to be, that our acquired opinions are always erroneous due to prejudice, and that it is necessary to adopt an objective method which will seek reality in all cases. If this be not the intent, we are unable to find it.

GEORGE S. PAINTER.

**Psychology at Work.** Edited by Paul S. Achilles. A Symposium by Lois Hayden Meek, Floyd H. Allport, Morris S. Viteles, Walter R. Miller, Arthur I. Gates, Arnold Gesell, Mark A. May. 260 pages. Whittlesey House, McGraw-Hill Book Company. New York and London, 1932.

This work describes the most recent methods and practical findings of present-day psychology in the several fields of its application. Written by seven psychologists who are recognized authorities in their respective fields, it presents in clear, non-technical language the applications and the relation of this interesting and increasingly useful science to industry and the professions, to social and political problems, and to child training and personality development.

The volume provides in a clear and trustworthy account an appraisal of the more significant achievements of psychology in a variety of fields. The present limitations of established knowledge in the science is frankly recognized, and the method by which students of psychology are approaching the many problems that still confront them is cited.

The work contains articles on "Psychology and the Pre-School Child," "The Study and Guidance of Infant Behavior," "Psychology and Education," "The Foundations of Personality," "Psychology and the Professions, Law, Medicine, and Theology," "Psychology and Industry," "Psychology in Relation to Social and Political Problems."

GEORGE S. PAINTER.

**The Evolution of Human Behavior.** By CARL J. WARDEN, Assistant Professor of Psychology in Columbia University. 248 pages. \$3.00. The Macmillan Co., New York.

The first half of this work is devoted to tracing the usual evidences of evolution. The aim is to show the development from the earliest forms of life up through the mammals, and the development of man from the anthropoids. The story is delineated rather dogmatically, and apart from the

detailed necessary biological facts. This half of the work is less vital than the ordinary biological treatise on the subject, and seems to serve only as an introduction to a study of human culture and its evolution.

The second half of the book, roughly speaking, is of greater interest, in that it deals with the author's specific problem of behavior. The author here traces the development and earliest beginnings of human culture as shown in wall paintings, carvings, and early stone implements, in cromlechs and menhirs. As environment varied, different races came into being, and we have man as he is today with his racial differences and relationships. A final prognostic chapter is added, in which speculations as to future development and evolution of mankind are indulged in.

The work gives the impression of an even and unproblematic evolution of the whole living world which has progressed according to a definite recipe which is now well understood and definitely formulated. The matter is far too complicated for such simple exposition.

GEORGE S. PAINTER.



## DR. GEORGE A. SMITH SIGNALLY HONORED

Dr. George A. Smith, superintendent of Central Islip State Hospital, who will retire December 1, 1932, after more than 50 years of hospital service, was highly honored at the Quarterly Conference of the State Department of Mental Hygiene held at Central Islip State Hospital, September 27, 1932. The entire afternoon session of the conference was devoted to a review of Dr. Smith's distinguished service in the care of mental patients.

The session was opened by Dr. Frederick W. Parsons, Commissioner of Mental Hygiene. After stating the purpose of the gathering, he read the following letter from Dr. Charles W. Pilgrim, former State Hospital Commissioner, and a life-long friend of Dr. Smith:

"My dear Dr. Smith:"

"I have just received notice of the meeting to be held in your honor on the 27th inst. and regret exceedingly that on account of my physical condition, it will be impossible for me to be present.

"I do, however, want to place on record my appreciation of your services to humanity and the State.

"During my incumbency of the office of Chairman of the State Hospital Commission, it was my privilege and pleasure to witness the results of your marvelous management of the hospital over which you have presided for so many years. It was always a great pleasure to visit your hospital, not only from an official standpoint, but from a personal one as well. The visits with you and your worthy wife were always looked forward to with pleasure and the friendship which has existed between us for nearly fifty years, grew stronger and stronger with each succeeding visit.

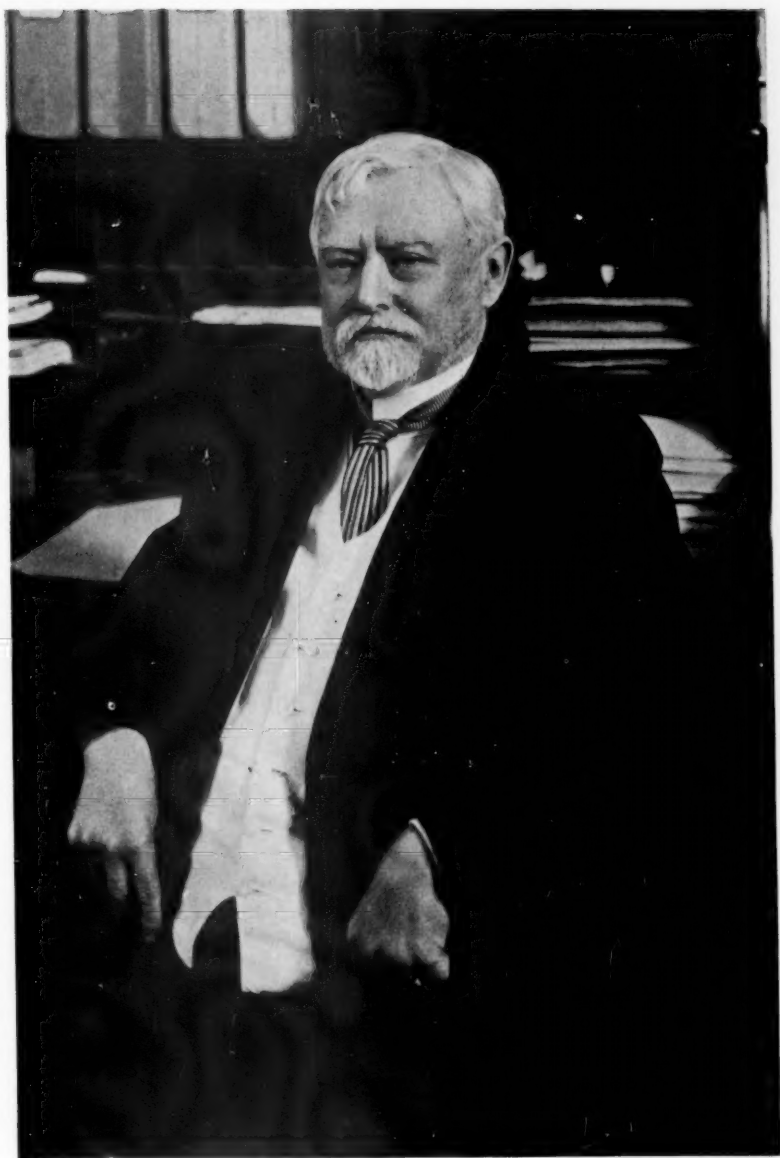
"I have always looked upon our friendship as one of the choicest blessings of my life, and you will carry with you in your retirement my sincere wishes for all the happiness that may come to anyone.

"Believe me, dear Doctor,

Your sincere friend,

Charles W. Pilgrim."

Papers were then presented by Commissioner Parsons and Dr. George W. Mills as follows:



GEORGE A. SMITH, M. D.



## DOCTOR SMITH'S SERVICE TO THE STATE

BY FREDERICK W. PARSONS, M. D.,  
COMMISSIONER OF MENTAL HYGIENE

In the higher branches of the New York State institutional service long tenures of office are common but not often do they reach the half-century mark. Today we are celebrating a notable instance, anticipating a date in the near future when George Albert Smith severs his connection with the service of the State and passes into honorable retirement. Those who have not reached that happy station profitably may survey that portion of Dr. Smith's life which has been devoted to institutional management and draw inspiration therefrom.

The principal figure of today's exercises, in 1882, when twenty-four years of age entered the service of the City of New York and for fourteen years devoted himself to the care of mentally disordered persons in New York City institutions. In 1896 the State took from the municipality that duty and gratefully acquired Dr. Smith with the institution which he had planned, built and operated for eight years. The period when the State Care Act went into effect was stormy. The first commissioners were forceful, energetic men. Perhaps individuals of that type were needed but as one looks back upon the years one has the impression that gentler moods might have been equally effective. There was, in some quarters, considerable bitterness but none at the institution presided over by him whom we honor today. He was far-seeing and realized that the welfare of the insane would be promoted by State care. A progressive outlook has been one of Dr. Smith's chief characteristics. He is loyal and courageous and were he asked today he cheerfully would embark on any undertaking, however arduous, if it were likely to benefit the Department as a whole. The State has never regretted that it acquired Dr. Smith when it took his institution. It secured an extraordinarily able administrator who would assume cheerfully and dispatch with apparent ease the large responsibilities in connection with a huge institution admitting and discharging literally thousands of persons each year. The apparent facility with which Dr. Smith governs merits inquiry.

Obviously everything cannot be done with one head and one pair of hands. The answer is, of course, executive ability. He knew what to pass on to others, whom to trust, and he deserved, attracted and held the loyalty of his subordinates. His ways were not always easy. He expected much but he received more than he asked because his subordinates, from the lowest to the highest, knew he was always there and could be relied upon for support and encouragement. The physicians whom he trained carry on his work in many places. Some have high positions in this and other states. They all have for him an affectionate regard. Dr. Smith initiated, directed, stimulated, and sometimes reproved, but he built a great humanitarian institution from which the imprint of his personality will not pass so long as one person remains who knew him and worked with him, for his patients and his institution.

When he spoke of Central Islip Dr. Smith never used the possessive pronoun, but this institution is his because he dreamed it, built it, inspired it and ran it.

One might think that when the State placed large responsibilities on the shoulders of one man it should ask of him nothing more, but recognizing Dr. Smith's efficient management, his skill in economics, the State required him to assist in the joint purchase of supplies when commodities were purchased by the State Hospital Commission for consumption in all the institutions. The Purchasing Committee was charged with the duty of examining into the market prices of supplies used in large quantities, examining samples, ascertaining quantities and preparing specifications, obtaining bids and awarding contracts. Dr. Smith was the first chairman of the Purchasing Committee and formulated its procedure. The success of the enterprise had not a little to do with the decision to make centralized purchase for all State departments.

When conducting clemency proceedings Governors were sorely troubled by last minute claims that insane persons were about to be executed. There were no means of controverting that allegation and it often resulted in unwarranted suspension of the directions of the courts. A commission was appointed by the Governor to examine prisoners during their entire stay in the condemned cells and to report to the Governor shortly before the date set for the

execution. For years Dr. Smith has been chairman of that commission, has journeyed to Sing Sing Prison on innumerable occasions and has officially passed on the mental state of persons about to die more times than any one now living. Whenever a Governor considers what action, if any, shall be taken on a clemency appeal, Dr. Smith's report is before him. The great responsibility of recommending to the Governor whether or not a condemned man shall be dealt with according to the law, his sentence commuted to life imprisonment or that he shall be transferred to a hospital for the criminal insane has been Dr. Smith's.

Near where we now are another institution has arisen. Dr. Smith supported the movement to establish Pilgrim State Hospital and was not disturbed by its size. He saw only the good which could be accomplished and he rejoiced that it bore the name of his old friend and associate. Dr. Smith opened the Pilgrim State Hospital, and until the designation of Dr. Tiffany, was its directing head.

Now, George Albert Smith, full of years, crowned with honors, with the realization of work well done and in the presence of your friends and coworkers, as spokesman of the Department of Mental Hygiene in which you have had a distinguished career, I express the hope that the coming years of honorable and graceful ease will bring you peace. May you, for a portion of each year, reside in the vicinity of your half-century interest where your advice may still be had. If you choose to spend the summer at your birthplace we will know that your thoughts are in Central Islip. You depart with the best wishes, the respect, the esteem and the admiration of all who know you.



## THE STORY OF CENTRAL ISLIP STATE HOSPITAL

BY GEORGE W. MILLS, M. D.,  
SUPERINTENDENT, BROOKLYN STATE HOSPITAL

A legislative act of 1842 legally assumed that after a certain lapse of time, and other legal conditions, insanity became incurable and provided that patients under treatment in the "Utica State Lunatic Asylum" might, after a greater or lesser interval, be declared incurable and removed to a poorhouse. The condition of those so returned to the poorhouses was so lamentable that agitation for better care and treatment led to the providing of the Willard Asylum, opened in 1869. To Willard were to be transferred the chronic insane but the State Board of Charities had the power to exempt localities and eventually some 20 such exemptions were granted. Conditions in the exempt counties became so pitiful that about 1886 the State Charities Aid Association began the effort culminating in the passage of the State Care Act of 1890. Previous to this, May 14, 1889, Dr. Carlos F. Macdonald, Henry A. Reeves and Goodwin Brown had been appointed as the first "State Commission in Lunacy," and in their second annual report they comment on the fact that in the act of 1890 the counties of New York, Kings and Monroe were exempted because these counties had made adequate provision for their insane, separate from their poorhouses.

In 1874, Dr. A. E. Macdonald, superintendent at Ward's Island, began in his annual reports to stress the evils of overcrowding and after much wrangling and conflict between various boards, a farm was purchased on Long Island. There seems to have been some uncertainty as to the exact location of this farm and its size. In one report it is located at Islip; in another near the Central Islip station; in size "from 900 acres upward." Eventually some one determined that it was 994. The institution seems also to have narrowly missed having been located near Farmingdale, only a defect of title intervened.

One is also somewhat uncertain as to just when the city acquired this farm; in the "asylum reports of New York City" it is said that the deed was delivered in the fall of 1885 but in a State report the date is given as 1887 and the purchase price \$25,000.

The erection of buildings was commenced early in 1888 and the "Branch Lunatic Asylum at Central Islip" first consisted of an administration building which also housed the staff; nine wards for patients; a kitchen; three dining rooms; a barn and carriage house; a water tank; a boiler and engine house, and "plumbing, gas fitting and sewage"—construction costs, \$197,000. The majority of these buildings still exist and are in active use, but not all for the original purpose for which they were built.

It is interesting to note that wood construction was specified because the farm colony was an experiment; and if it proved a success, the wooden buildings were to be replaced by brick. It is another example of a temporary arrangement running, in this instance, 43 years—and the end not yet in sight.

To clarify what follows I will roughly outline the ground plan of Central Islip.

The property is an irregular rectangular tract, some three miles long with its long north and south axis bi-sectioned by Carlton Avenue. The first buildings were all on the north portion of the property and to the east of Carlton Avenue. The first expansion was to the west of this street and on a south portion of the grounds, the administration building roughly in the center. So developed the terms North Colony and South Colony. The North Colony contained the old wooden buildings of the New York City Farm days and designated groups A, B and C. The others, detached brick cottages, were for men and are groups D, E and F. The South Colony was of entirely different construction; a building a mile long with only one break and consisting of four groups, namely, G, H, I and K. Then to the North Colony—and fairly close to the administration building—was added first group S, of seven buildings and a little later group M, of four. The James group now being completed in its 13th year, lies considerably to the south of the administration building and on the east side of Carlton Avenue opposite the original South Colony. Staff quarters are in four groups facing on Carlton Avenue, which street runs south to East Islip, north through Central Islip Village to Huppauge and Smithtown.

May 6, 1889, the institution was opened by the transfer of 40

male patients from Ward's Island and Dr. H. E. Evarts was sent from that hospital to be physician in charge at Central Islip. The first women patients did not come until September, 1892.

In 1892-93 the detached one-story brick cottages of groups D, E and F were started, and 40 years ago there was the same complaint about slowness of completion of contract buildings that one experiences today. The fifth annual report of the "State Commission in Lunacy" reads: "Their completion, which seems to be unnecessarily delayed, will afford relief to Ward's Island." One also finds in this report the statement: "The location, abundant supply of pure water and the character of the soil, are such as to render the site a most healthful one, while the opportunities for extension are practically unlimited." I doubt, however, that the Commission foresaw at that time the degree of extension which has occurred.

Comment was made in this report of the productiveness of the farm and that the general superintendent, if permitted to do so, could "abundantly supply all of the inmates at Ward's Island with fresh vegetables." However, the Commission did not think that the standard of care was as high under city control as in the State hospitals. The per capita cost for 1892-3 was \$2.40 per week, whereas in the State hospitals it was \$3.75. The Commission went definitely on record as opposed to continuance of city control.

In 1893-4 spring and hair mattresses were substituted for straw, and chairs and settees for wooden benches. At this time the institutions had to list their "instruments of precision." We note that Central Islip had 6 hypos; 2 surgical pocket cases; 4 clinical thermometers; 3 stethoscopes; 1 nasal speculum; 1 set of ear specula; 1 set of tooth forceps and other miscellaneous items. It is also reported with apparent pride that the institution had "an ample number of bathtubs."

In the fall of 1894 one of the new brick cottages in group D was occupied, but much is made in the report of the poor construction of these brick cottages; that the buildings were taken over from the contractor on November 9, 1894, but that the sky could be seen between the roof and the wall in the "F" dining room and that cement floors proved to be only a thin layer of cement spread over shavings and rubbish.

About this time an energetic, likeable young man from New Hampshire, Dr. George A. Smith, was attracting attention by his work at Hart's Island, although—as I have heard him tell it, much of this work consisted of sailing a Newport catboat and picking up lobsters, oysters, and other shellfish. Hart's Island must, at that time, have been a fishing paradise.

February 26, 1882, Dr. Smith had been appointed assistant physician at Hart's Island; in 1888 he had been promoted to assistant superintendent, and on May 1, 1892, to acting superintendent.

January 1, 1895—as it was winter—he made no objection to leaving the catboat and the lobsters, and was transferred to Central Islip.

The report of the "State Commission in Lunacy" for the year ending October 1, 1894, gives the value of the real estate, including buildings at Central Islip, as about \$550,000; the capacity of the institution as 300 patients; the average number under treatment, 415. In the 38 years that Dr. Smith has been here, the \$550,000 valuation has grown to over four millions and the average number of patients in the hospital from a little over 400 to over 6,600.

At the time of Dr. Smith's appointment at Central Islip four so-called asylums, namely: Ward's Island, Blackwell's Island, Hart's Island and Central Islip, made up the "New York City asylums for the insane," and Dr. A. E. Macdonald was general superintendent.

January 28, 1896, an act became effective which consolidated the New York City "asylums" at Ward's Island and Central Islip into a State hospital named Manhattan. The annual rental of Ward's Island was set at \$1.00 and the Central Islip farm was transferred by warranty deed for the same sum. It was also specified that the insane were to be removed from Hart's Island and Blackwell's Island. Dr. Macdonald continued as general superintendent. State ownership at Central Islip, therefore, dates from 1896; and a similar act having taken over the "asylums" of Flatbush and St. Johnsland (the latter now Kings Park) New York was the first state in the union to bring all of its mental cases under complete State care.

The first large central kitchen was begun in July, 1897, and stands out as a building completed ahead of time. It is the bright

spot in the 1897-8 building report which is otherwise mostly a recital of delays, defects and disappointments.

In 1898 the erection of the South Colony was begun and during 1898-99 group "D" was completed by the addition of three more cottages. A brick power house was provided to replace the wooden one.

From January 28, 1896, to April 25, 1900, Central Islip operated under a general superintendent and was a branch of Ward's Island. On April 25, 1900, the act dissolving the polygamous relationship became effective and Central Islip has since functioned on its own. Until 1905, however, it was known as "The Manhattan State Hospital at Central Islip." It has never had any children, as have Brooklyn and Utica, but has grown and grown and waxed beautiful and prosperous. Not to draw comparisons, but to indicate what Central Islip looked like years ago, I suggest that all of you who drove out go back by way of Crooked Hill Road and see the Pilgrim site. What at Central Islip are now beautiful, well kept grounds and an attractive farm, were in the beginning merely scrub oak and pine and heaps of excavated soil much as is now the picture at Brentwood.

Long Island has hills on the north side with beautiful views of combined woods and water. The south shore is low with sandy beaches; the ends and both sides are fertile; but the middle tends to be barren. What we see here represents hard work and many years of effort.

During the fiscal year 1899-1900 (the fiscal year at that time was from October 1 to September 30) covered in the first annual report of Central Islip as a separate institution, the average number of patients under treatment was 1,124. Admissions were by transfer only and totaled 239. The same Board of Managers functioned for Manhattan State Hospital East, Manhattan State Hospital West, and Manhattan State Hospital at Central Islip.

The staff at Central Islip consisted of the superintendent, a second assistant, an assistant, two junior physicians and two internes—a total of seven. Dr. Marcus B. Heyman was second assistant and Dr. Charles G. Brink, assistant. Drs. Harry R. Humphries and Walter G. Ryon were juniors.



It is noteworthy that at this time Central Islip held field sports for patients on three summer holidays: Decoration Day, Independence Day and Labor Day, and this policy has continued to the present time. We also note in the first annual report that the hospital band has increased in number and efficiency and baseball games were stressed as an amusement for patients. Throughout his entire administration at Central Islip, Dr. Smith has been keenly interested in the development of the hospital band, field sports, baseball games and other activities—all which had to do with the entertainment and diversion of patients. The patients' library, even at this early date, had 621 books.

In his first report we note emphasis laid on occupation for patients and I have often heard Dr. Smith refer to the sand piles from the South Colony construction work as his "drug store."

In June, 1900, a semi-military drill and review of patients was instituted. The patients, with supervisors, charges and attendants, marched to the athletic field where they were reviewed by the superintendent and a designated number of medical officers. In Dr. Smith's report we note that this weekly drill—weather permitting—resulted in marked improvement in the appearance of both patients and employees and that they enjoyed it. It may be that the patients did enjoy it; but as one of those medical officers later designated in turn to be present, I did not; although at that time I did not express this opinion to the superintendent.

In 1902 the Legislature abolished the Boards of Managers and created for each hospital a "Board of Visitation" of five members. The members of the first board were James MacGregor Smith, William N. Cohen, Isaac S. Seligman, George D. Mackay and Miss Grace Gillette. This same board functioned for Ward's Island. As noted earlier in this story the Central Islip separation from Ward's Island occurred in 1905 at which time the Boards of Visitors were abolished and Boards of Managers of seven members substituted. June 1, 1905, the first independent board for Central Islip was appointed, consisting of James MacGregor Smith, Henry M. Hollister, Leopold Sondheim, William N. V. Hoffman, Hugh Kelly, Mrs. Wm. Robinson and Mrs. Augustus Floyd. Mr. Smith was elected president and in his case the new law served merely to con-



centrate his affection in one place instead of three. He served the State and Central Islip long and faithfully. All of us who know him regret that his illness prevents his being with us and we also know that he would have greatly enjoyed participating in a tribute to one of the same name, although not a relative, his friend and kindred spirit of over 40 years.

In 1901, the occupation of the South Colony began and during that fiscal year Central Islip received 2,138 patients by transfer—to that time, the largest recorded movement of patients in any one year. Also, during that fiscal year, the first admissions by original commitment occurred: namely, 4—2 men and 2 women.

It may be of interest to many of you that Dr. James V. May, our distinguished president of the American Psychiatric Association, began his psychiatric life at Central Islip where he was appointed junior physician on September 11, 1902.

Others well known to most of us and who reached, or who now hold positions of responsibility and trust, and also were at one time or another on the Central Islip staff, are the late Dr. Ryon, superintendent at Hudson River State Hospital; the late Dr. Heyman, superintendent at Manhattan State Hospital; Dr. Burdick, superintendent, Dannemora State Hospital; Dr. Van de Mark, superintendent, Rochester State Hospital; Dr. Vaux, superintendent, Newark State School; Dr. Folsom, superintendent, Hudson River State Hospital; Dr. Curry, superintendent, New Jersey State Hospital, Morris Plains, N. J.; Dr. Thornton of the Department of Hospitals, New York City; Dr. Murray, physician in charge, Dr. Combes' Sanitarium, Corona, Long Island; Dr. Leak, superintendent, Connecticut State Hospital, Middletown, and Dr. Moore, chairman, New York State Parole Board.

All of these Dr. Smith called "his boys" and was proud of their advancement. "His boys" also were, and are, proud of their Central Islip experience and grateful to Dr. Smith for the opportunities and training he gave them.

Group "G" (the north end of the South Colony) was designated in March, 1903, as the reception group and during the fiscal year 1902-3, 415 patients came to Central Islip on original commitments. The admission rate at this hospital gradually increased and the

high water mark of 2,001 was reached in 1930-31. During all these years the four wards of group "G" continued to serve as a reception center but have now been replaced by a new unit. Until recent years all two-story patient buildings at Central Islip had the general arrangement of sleeping quarters on the second floor, day-rooms, etc., on the first. So far as I know, this arrangement had its inception at Central Islip. We note that in 1903 a diet kitchen was established in connection with the acute group and the reception center was also equipped with a hydrotherapy department, an operating room, a static machine with X-ray attachment, and experimental work was done in connection with the treatment of skin conditions by X-ray. A central drug store was opened in the same center, and a laboratory. We, therefore, see that as soon as the plant developed into a rounded-out institution with an admission service, Dr. Smith provided all methods and facilities for the care of all the patient—both mind and body. We note throughout these reports of 30 years ago the progressive spirit of the superintendent and his constant striving to give the patient the best obtainable. Today we have the advantage of a well-organized State Division of Architecture, a standing Committee on Construction; a research man in the office of the State Architect, and buildings are planned with treatment and dressing rooms, hydro-, physio- and electro-therapeutic units; laboratories; dentists' office, etc., but in 1903 this was not so. Practically none of these things were provided for in the plans. They had to be developed by the superintendent and fitted into various odd spaces.

During the fiscal year 1903-4, Dr. Smith, who has always given special study and attention to fire prevention, organized his first central fire department. The old laundry building in the North Colony was remodeled, equipped with fire-fighting apparatus and housed 14 men who were the trained nucleus of the fire-fighting staff.

The first assembly hall with a capacity of 1,200 was opened February 22, 1905. This hall burned November 3, 1929, and is being replaced by a modern and larger structure. The administration building was occupied May 15, 1905.

Also in 1905 there was created by the State Charities Aid Asso-

ciation a sub-committee on prevention and after-care. They employed what was then called an after-care agent and from this small beginning grew the present system of parole and preventive clinics. Central Islip early joined this movement and for the fiscal year 1908-9 the after-care agent, Miss Horton, had under supervision 117 cases. All but eight were from Central Islip or Ward's Island. In 1910, in conjunction with the State Charities Aid Association, Central Islip opened the East Side clinic at 295 Henry St., Manhattan. In 22 years has developed the smooth-running State-wide program with which we are all familiar. This early joining in of Central Islip with the new after-care and preventive program well demonstrates the Central Islip attitude during Dr. Smith's administration.

When I came to Central Islip in the fall of 1906 grounds lights were very scarce. There were 21 buildings in the North Colony and physicians assigned to the North Colony services alternated on night rounds. I was shown around the night of my arrival by Dr. Vaux. The next night I started out to make the rounds. I eventually found most of the buildings and from the night reports the next morning, learned that I had found some of them twice. Adequate lighting of the grounds and provision for paths dates from about 1907.

The Smith group, consisting of six detached patient buildings, a central kitchen and six dining rooms, was opened in 1911, and in the same year the Velie Home for employees, and the Hoffman—the first separate staff building were completed. After 1911 a lull occurred in the building program, not only at Central Islip but throughout the Department, and for many years inadequate provisions were made from current revenues so that, as we all know, overcrowding of patients and make-shift arrangements for employees grew steadily worse, year by year.

The Legislature of 1917 created the State Hospital Development Commission. In their first report they recommended that the capacity at Central Islip be extended from 4,100 to 5,250. June 29, 1919, ground was broken for the first building of the James group. This was planned as a reception building but was not found suitable and was converted to the care of the acute sick and as a diag-

nostic clinic center. No further progress was made until the bond issues.

In 1928 work was resumed on the James group; three buildings for 600 patients were first provided and in the 1930 construction program was included a new reception unit now being occupied. In this same program there were three additional buildings for patients; four for attendants and three five-family staff buildings.

It is a coincidence that the Smith group, named for Dr. Smith; the MacGregor, named for the president of the board, and the James group, named for the chairman of the State Hospital Development Commission, can with their combined names read James MacGregor Smith—the full name of the one who for many years was president of the board.

To sum up we note four phases in the development of Central Islip:

(1) 1888-1894, the wooden cottages and then the brick ones of the New York City Farm period.

(2) 1898-1902, the South Colony.

(3) 1903-1919, sporadic additions including group "S" and group "M"; the first seven staff cottages, employees' home, nurses' home, etc.

(4) The beginning of the James group with one building which, for a number of years stood isolated from the rest of the institution but is now practically surrounded by the completion of this group, including a new reception division.

To very few is, or will be, granted the satisfaction of participating as chief administrative officer in a development such as just summarized. Through all these years one man was at the helm. We see his individuality stamped for all time in the buildings and grounds. We who have been on his staff know his loyalty to his own and their loyalty and devotion to him.

Shorter tributes to Dr. Smith which followed are presented in part.

REMARKS BY HARRY P. ROBBINS, PRESIDENT, BOARD OF VISITORS,  
CENTRAL ISLIP STATE HOSPITAL

Addressing Dr. Smith, Mr. Robbins said:

"I know you are so modest that you don't like to be speeched at. You probably never thought of yourself as a saint. I came across sometime ago a definition or interpretation of saints which as a description so accurately fits you that I am going to read it.

"Why were the Saints saints?

'Because they were cheerful when it was difficult to be cheerful.

'Because they were patient when it was difficult to be patient.

'Because they pushed on when they wanted to stand still.

'Because they kept silent when they wanted to talk.

'Because they were agreeable when they wanted to be disagreeable.'

"I don't know that you ever wanted to be disagreeable. I have never seen you when you were disagreeable. I feel sure that you have been silent many times when you may have wanted to talk. I am also sure you were patient when it was difficult to be patient. As to pushing on when it would have been easier to stand still, this institution bears testimony to the fact that you always pushed on and finally I know you are always cheerful.

"Many years ago when my college years were closer by, I attended a meeting at Carnegie Hall. The man in charge of a great welfare organization of which I knew something started to tell something of the work. Becoming impatient, with the critical attitude of a recent college graduate, I muttered quite audibly, 'For Heaven's sake don't bother about statistics, but tell us what is in your heart,' whereupon a stranger near me leaned over and touched my arm, and said: 'Hold on, young man, perhaps his heart is too full.' That is the case with me today, my heart is too full, but I want you to know, Dr. Smith, that wherever you go or whatever you do, you have the affection and devotion of your board."



TRIBUTE BY DR. JACOB OSHLAG, MEMBER OF BOARD OF VISITORS,  
MANHATTAN STATE HOSPITAL

It is with a sense of intense gratification that I rise to add a few notes to the harmonious melody rendered by some of the distinguished guests in this audience as an interpretation of the life and activities of our beloved friend, Dr. George A. Smith.

As a man he has been blessed with a wealth of brilliant mentality of an extraordinary high order. This has enabled him to make his priceless contributions and to store up a vast amount of scientific data, all of which he skillfully and industriously is daily applying to benefit human kind.

As a public official Dr. Smith is a great disciplinarian and at the same time is eminently just and sweetly humane.

As a friend his loyalty and devotion are the cornerstone of that structure built of numerous virtues which constitute his entire existence.

May he continue in his noble labors in the service of humanity and to enjoy the very real happiness such service engenders for many, many years.

REMARKS BY DR. JAMES V. MAY, SUPERINTENDENT, BOSTON STATE  
HOSPITAL, AND PRESIDENT OF THE AMERICAN  
PSYCHIATRIC ASSOCIATION

It is a great privilege, Mr. Commissioner, to be here today to pay tribute to a good friend, the grand old man of Central Islip. During the term of my service with the Commission it was part of my duty to visit and inspect this institution and I came here on frequent occasions from 1911 to 1916, and had a pretty good chance to familiarize myself with the situation as it existed in that day. The Commission looked upon Dr. Smith as one of the best men in the Department, a most efficient superintendent, an excellent advisor, and an unusual administrator. During my many years of acquaintance with him since that time, I have never had any occasion to revise my estimate of the man in any way.

The only way to find out what a superintendent is like, however, is by working under him. As has already been pointed out, it was my privilege to be a member of Dr. Smith's staff. I came here 30



years ago during this present month. I found Dr. Smith a man who was highly appreciated by all around him. I found him to be a friend to every employee and patient in the institution and they all liked him.

Dr. Smith, I trust your remaining years will be years of peace and plenty and that you will carry away with you nothing but the most pleasant recollections of your many years in the State's service.

ABSTRACT OF REMARKS BY DR. ROBERT M. ELLIOTT, SUPERINTENDENT,  
WILLARD STATE HOSPITAL

Inasmuch as I rank next to Dr. Smith in length of service and have known him for 37 years, I feel that I cannot let this occasion pass without saying a word. I came from Rochester to what is now the Brooklyn State Hospital in November, 1895, only a few months after Dr. Smith came to Central Islip; very soon after I visited Central Islip and have always remembered the cordial reception which Dr. Smith gave me. There were then approximately 900 patients accommodated in two or three wooden buildings. Dr. Mills has given us an excellent account of the developments which have taken place here since that time, and I will confine my remarks chiefly to things of a more personal nature. Dr. Smith has always been ready and willing to cooperate with other superintendents and has extended courtesies to those in other institutions to tide over unusual situations. The metropolitan hospitals have always been subject to adverse and sensational newspaper notoriety, unmerited as a rule, but Central Islip has been singularly free from this. It may be that Dr. Smith has those elements of a saint which have been so interestingly described by Mr. Robbins, and that may explain, to some extent at least, the reason for it.

It is not necessary for me to say anything about Dr. Smith's work at Islip; the place speaks for itself, and it would take me some time to become oriented here. The number of patients has increased from 900 in 1895 to approximately 7,000. Dr. Smith will go down in State hospital history as one of the greatest administrators and executives the service has ever had, and, if I had the authority, I would change the name of this institution and call it the 'Smith State Hospital.'

ABSTRACT OF ADDRESS BY HON. PETER A. HATTING, JUSTICE OF THE  
SUPREME COURT

I regret to be here on an occasion like this. This wonderful man has reached the zenith of his power and now his great work must come to an end. It is a tragedy. It is just too bad.

In my work as justice of the supreme court which was preceded by that of being a city magistrate, and theretofore as a district attorney, usually called public prosecutors, I came in contact with various types of people, such as the insane. They are really to be pitied, but I have often thought what a compensation it was that the poor unfortunates who came down here to Central Islip were so lucky, in spite of all their misfortunes, to come under the hand of that skillful magician who turns out thousands of sane minds. Generals who shock, maim and slaughter people have monuments put up in their honor, but saving lives and minds gets much less recognition.

It is shocking to think this fine man at the top of his career has got to stop and not give the world and the public the power so peculiar to him. The English used to kill off the old to encourage the young. We want no philosophy like that here or the shame of it. Dr. Smith is a young man of 74. I know his sense of humor; he has a remarkable sense of humor. He has a great spirit which expands and reaches out to every unfortunate in this institution and that is quite a wonderful thing. There is not another Dr. Smith.

I did not want to miss this occasion of telling you not of Dr. Smith but of my regret, and that of others, that there is such a thing as the ending of Dr. Smith's sovereignty over this institution. I wish him a long life, and we all say to him, "Hail and Farewell!"

PRESENTATION OF GIFT BY DR. RICHARD H. HUTCHINGS,  
SUPERINTENDENT, UTICA STATE HOSPITAL

Dr. Smith, Mr. Chairman, the honor of having been appointed chairman of the committee which has had this matter in hand for something more than a month came to me by default as a well-known golf trophy once came to me by default. Dr. Elliott, who

next to Dr. Smith, is the senior superintendent in the Department, and who by his seniority would have had this honor, was at that time and has been most of the time since, absent abroad, and so I was able to steal his thunder.

Dr. Smith, I have not the honor of being called one of your boys, but I have this bond in common with you that I entered the psychiatric service through the channel which you did, and that was a very good one for we each first served under that grand old man of Ward's Island, that genial, kindly old soul, whom we all remember so reverently, and although I did not remain with him as long as you did and so did not gain as much as you, I hope that what I did get was good for me. Thinking of these old days, I realize that I am an old-timer and as one old-timer to another I hail you, Dr. Smith.

It cannot have been a coincidence that all the men who called you chief were, and have since remained ever afterwards, devoted to you. There is a reason to account for it and the reason is this: It is because you are the man that you are, the leader that you are, and the friend that you are, and your boys all know this to be true. Having these thoughts in mind your associates determined that they would leave with you a little gift, which would in some measure convey to you whenever you looked at it, a remembrance of them and their friendship for you and the pride which they have in you. But you did not carry on your life work alone; there is another near to you whom we also love and admire and who on this occasion we could not fail to remember.

Mrs. Smith, I shall never forget the occasion when first we met. I am sure you will recall that year when the American Psychiatric Association met in San Antonio and afterwards a party was made up for a tour of Mexico. We all retain most pleasant recollections of that trip. Its success was largely due to your presence. It was you, your light heartedness, your good humor, your ready wit, which added so much to that occasion and helped to make it so pleasant. Even the custom officers succumbed to it. May your life henceforth be as happy and care free as then.

May you both live long to enjoy the leisure and rest from your official cares. May you together build for yourselves a new home

where love and happiness shall dwell within and where peace and contentment will sit by your fireside. This is the wish that I bring to you from your friends in the Department in Albany and in the field, and the gifts which I shall hand to each of you comes from them but as a token.

#### RESPONSE OF DR. SMITH

I hardly know how to commence. I hardly know what to say. You may think it is easy. Just put yourself in my place and come up here and try it.

I little expected fifty years ago when I entered the Department as assistant physician that I would stay fifty years and end it so beautifully as this. It is well worth fifty years of service to be so honored and I appreciate it very much.

It will be hard for me to leave the associations, not only with the high officials, superintendents and doctors, but especially those behind the guns, the employees, nurses and attendants. I know their value.

Also I want to say that I have lived under every Commissioner from Stephen Smith down, the first lunacy commission started in 1889, and I know all the medical heads of that Commission, with its many changes, have always been ex-superintendents, except two, and these Commissioners all looked upon the superintendents as their cabinet, which they were and are.

The present Commissioner, Dr. Parsons, who has been longer a medical commissioner than any of his predecessors, has had double the work to do, due to the changing of the system and the additional duties in the educational department, and he has done a great deal more in the matter of construction in relieving the overcrowding and bettering the care of the insane. He has been alone in this and I wish him good health, long life and prosperity. Furthermore, I would say that he has still kept politics out of the hospitals. You know I have often said there are no politics in lunacy but there is a lot of lunacy in politics.

Now it is pretty hard to stand here and try to talk when you feel right from the heart. I have just been presented with a gift from the hearts of others to me. Every other heart strikes my heart. I

have never suffered from heart failure or heart trouble but I want to say that now my heart beats so rapidly and so hard that I can hear the sounds in my ears and my heart is speaking and it says, Thank you! Thank you! Thank you.

#### ABSTRACTS OF CLOSING REMARKS BY MONSIGNOR YORK

We have heard a great deal today about Dr. Smith and the well-deserved praise given him and his fifty years of work. And I may say after a friendship of thirty years that the half has not been told of his great work and of his unique and charming personality.

I have never met a finer gentleman. If a gentleman is, according to the late Cardinal Newman, a man who never gives pain unnecessarily, Dr. Smith measures up to that standard. Under all, and at times, very difficult occasions he has kept his temper and perfect self-control.

He has given all his employees a square deal, all being allowed to have easy access to his office and air their grievances and defend themselves when charged with dereliction of duty. This is an admirable trait in a superintendent and a remarkable one in Dr. Smith when one considers that he was trained under a martinet.

On this occasion I am sure Dr. Smith will not be pleased to take all the laurels for his golden jubilee for himself, but will divide with Mrs. Smith, his faithful and tried spouse, whom he led out here to the sands and scrub oaks of Long Island to be almost buried for thirty long years. She deserves praise and she deserves her share in this testimonial meeting. We priests, though not married, see from our relations with our parishioners how much the average man needs the counsel and guidance of his wife.

Yes, we honor Dr. Smith and we honor Mrs. Smith, and my prayer is: "May the Lord bless them and have them always in His holy keeping, both in this life and the life to come, through Jesus Christ our Lord." "Amen."

In addition to the tributes of the members of the Quarterly Conference Dr. Smith received appreciative letters from Governors Roosevelt and Lehman and from many other State officials and friends.

## SALIENT FEATURES OF THE MENTAL HYGIENE MOVEMENT

The following brief address by Clifford W. Beers, after being translated into French was read at a meeting held under the auspices of the French National League for Mental Hygiene, at the Sorbonne, in Paris, on June 24, 1932.

One who founds a movement of vital importance to humanity inevitably builds better than he knows. In my earliest plans and first editions of my autobiography, "A Mind that Found Itself," the earliest features of the mental hygiene movement were outlined as follows: *Scientific treatment* and *humane care* for the mentally ill; *research* into the causes and cure of disorders of the mind; and the application of methods and measures for their *prevention*. The movement, however, is now so broad in scope and purpose that it can be of possible benefit to everyone.

No one has yet been able to define mental hygiene in a satisfactory way, but, like gravitation, which exerted its force before Newton discovered its laws, so mental hygiene is exerting its influence while we await the appearance of some genius capable of formulating its principles.

The mental hygiene movement, now an international one, has justified itself by results already achieved, only two of which I shall have time to mention.

One is the remarkable and steady change in the attitude of the public toward disorders of the mind, toward those who suffer from them and, also, toward the institutions in which such patients are treated. Indeed, so-called insanity is now widely regarded as a disease and not as a disgrace. Toward this humane result many have contributed, among them Dr. Toulouse, whose "open service" at the Henri Rousselle Hospital in Paris has demonstrated so convincingly that mental patients need not be treated as prisoners, guilty of a crime.

A second outstanding result of organized work in mental hygiene is the bringing of the medical profession, especially the psychiatrist, in close and continuous cooperation with the lay public, particularly with leaders in education, law, religion and in social work.

With this merging of forces, the mental hygiene movement will not only reach its known objectives, but will continue to develop and will endure so long as the mind of man serves as the sanctuary of the divine spark that makes possible such work and such movements as have brought this distinguished audience together in this great amphitheatre tonight.



## MENTAL PATIENTS IN STATE HOSPITALS, 1929-1930

The director of the census announced on September 14, 1932, the results of the fourth and fifth annual enumerations of patients in State hospitals for mental disease, covering the years 1929 and 1930.

The report covers the mental patients in 163 State hospitals in 1929 and 164 State hospitals in 1930, together with, in each year, two Federal hospitals, St. Elizabeth's in the District of Columbia and the Asylum for Insane Indians at Canton, South Dakota. Approximately 80 per cent of all mental patients cared for in hospitals and other institutions in the United States are cared for in those hospitals.

The report contains statistical data relating to the movement of patient population, personnel and expenditures in the individual hospitals and states, and gives detailed information concerning the psychoses and sex of new, or first admissions, readmissions and discharged patients for the years 1930 and 1929. General comparisons are also made with similar data for the years 1922, 1926, 1927 and 1928.

The total number of patients on the books of the State hospitals, at the end of the year 1930 was 323,688, of whom 291,077 were in residence and 32,611 were on parole or otherwise absent.

During the year 1930 the total number on the books increased by 11,555; during 1929 by 9,595, and during the 9-year period from the beginning of 1922 to the end of 1930 by 80,251.

The number of persons in State hospitals per 100,000 of the general population increased from 63.7 in 1880 to 236.1 on January 1, 1931, the rate in 1931 being 3.7 times that in 1880.

There were 62,738 first admissions, 15,714 readmissions, 38,538 discharges and 26,923 deaths in 1930.

The total number of officers and employees at the end of the year 1930 was 45,817.

The total cost of operation of 160 State hospitals during 1930 was \$105,733,982, and the average per capita cost of maintenance of patients in these hospitals was \$302.64.

## **ANNUAL MEETING OF THE AMERICAN OCCUPATIONAL THERAPY ASSOCIATION**

The sixteenth annual meeting of the American Occupational Therapy Association was held in conjunction with the American Hospital Association at Detroit, Mich., September 12-15, 1932. The sessions were held in the Convention Hall at Cass and Woodward Avenues. Unusually liberal space was provided for the educational exhibit in which the State of New York was well represented.

At the opening session of the conference, Dr. George F. Stephens, president-elect of the American Hospital Association, extended most hearty greetings to the members of the association, and Drs. W. L. Babcock and Stewart Hamilton of Detroit most graciously extended to the members assembled the hospitality of the institutions of the city and of the State.

The keynote address of President Joseph C. Doane was a call to a higher realization of professional standards in training and in duty. The large number of medical men present indicated the increasing interest in the scope of occupational therapy, its relation to educational training or to job objectives, and to its increasing use in mental and orthopedic hospitals.

Another noteworthy feature of this session was the inspiring address on "The Value of Professional Organizations by Muriel Ansecombe, superintendent of the Jewish Hospital, St. Louis, Mo.

The evening session was a memorial meeting for Thomas Bessel Kidner, founder and late president of the association. The tributes to the departed leader were marked by simplicity, dignity and intimate and tender feeling.

A most interesting session on Tuesday was devoted to work with children, and curative workshops. An outstanding paper was presented by G. Kirby Collier, M. D., of Rochester, N. Y., on "Directed Industrial Therapy as an Aid to the General Practitioner and the Specialist.

The banquet held on Tuesday evening at the Hotel Statler was a festive occasion. There was an attendance of over 100. The beautiful costumes, flowers and animated faces created a picture long to be remembered. President Doane was most happy in his remarks in introducing the speakers of the evening, Dr. Goldwin Howland of Toronto, Canada, and Professor Harvey Zorbaugh of New York University.

Dr. Howland, an honorary life member of the association, stressed anew the international character of the work of the association and called attention to the desire of England and Scotland to follow the practical leadership of this country in establishing standards for occupational treatment for those suffering from mental disorders in public hospitals.

Professor Harvey Zorbaugh made an effective appeal for a study of the needs of the youth in hospitals and allied institutions.

On Wednesday a very charming tea, given in honor of the association at the Women's City Club of Detroit, was largely attended by members, and persons associated in allied lines of endeavor.

Due to the present financial stress it was not expected that the meeting would be a large one, although there is much local interest in occupational therapy in Detroit. However, it was gratifying to find that 156 members had registered and that 17 states were represented.

The officers elected for the coming year are: President, Joseph C. Doane, M. D., Philadelphia, Pa.; vice-president, Everett S. Elwood, Philadelphia, Pa.; secretary-treasurer, Mrs. Eleanor Clarke Slagle, New York.

Miss Mary E. Black (Detroit, Mich.) and Miss Marjorie Taylor (Milwaukee, Wis.) were elected to the Board of Management to replace Everett S. Elwood and T. B. Kidner (deceased) whose term of office expired this year. Dr. William R. Dunton, Jr., (Baltimore, Md.), Mrs. Carl N. Davis (Milwaukee, Wis.) and Miss Geraldine R. Lermitt (St. Louis, Mo.) were re-elected to the Board of Management for a period of three years.

## ACUTE SICK AND INFIRM BUILDING OF THE BROOKLYN STATE HOSPITAL

(See Frontispiece)

The acute sick and infirm building which is now under construction at the Brooklyn State Hospital, Brooklyn, N. Y., is located in the southwest corner of the institution grounds, facing Clarkson Avenue on the south and siding on Albany Avenue on the west. The Kings County Hospital is immediately adjacent to the Brooklyn State Hospital on the west.

This building has been developed to take care of the medical and surgical cases which may be brought in from the reception group of new admissions and the medical and surgical cases which may be brought in from the other ward buildings of the institution. It should be noted that the routine treatment of the patients for mental disorders will be taken care of in the ward buildings in which they are housed and that only the acute medical and surgical cases will be admitted to the acute sick section of the acute sick and infirm building. The infirm patients of the institution are housed in this building and although not requiring a great deal of medical attention, must on the other hand have a great deal of attendant service.

The building is of a modified set back type and has 18 floors exclusive of the basement. It covers an area of approximately 200x200 feet. The building is of fireproof construction with exterior facing of brick. Limestone is used as exterior trim. Pitched roofs are covered with slate and flat decks with built-up roofing. Interior wall finishes are of marble glazed tile or plaster. Floors are of terrazzo, asphalt tile or linoleum.

The basement contains the hospital's kitchens together with all storage and preparation units. The hydrotherapy and the electrotherapy departments are developed on this floor.

On the first floor are the visitor reception rooms, all executive offices, diagnostic clinics, out-patient treatment departments, food service rooms and dining rooms for the staff.

The second floor contains nurses' quarters, nurses' dining room, training schools and male and female employee sick bays. This floor has 16 single rooms and four three-bed wards.

The third, fourth, seventh and eighth floors are for male infirm cases; these patients may be distributed to the various floors according to psychosis and physical condition. The fifth, sixth, ninth and tenth floors are for female infirm patients and similar distribution can be made. Each of the floors (third to tenth inclusive) has seven single rooms, one six-bed ward and one 34-bed ward.

The eleventh floor contains the surgical section and has a complete operating unit. The operating room is exposed on the southern, eastern and western sides. All windows are glazed with actinic glass to reduce the radiant heat from the sun and soften the light. All floors have brass strips to ground out stray electrical currents. All cabinets are built in, all corners provided with cove and all recesses are made accessible for cleaning. The scrub-up and sterilizing sections are directly adjacent to the operating room, the connecting doors having been omitted.

The eleventh and twelfth floors are for female patient medical and surgical cases. The eleventh floor has six single rooms, one eight-bed ward and three 11-bed wards. The twelfth has six single rooms, one six-bed ward and three 11-bed wards.

The thirteenth and fourteenth floors are for male patient medical and surgical cases. Each of these floors has six single rooms, one six-bed ward and three 11-bed wards.

The fifteenth and sixteenth floors have been developed for future completion. These are the first two floors of the tower section.

The seventeenth and eighteenth floors contain the mechanical equipment necessary for the operation of the ventilating system, elevators and water system.

The total patient bed capacity of this building is 570. The basis of design for ward sections is 50 square feet of floor per patient and for the single rooms 120 square feet of floor per patient. The day room space is computed on the basis of 40 square feet of floor for each ambulant patient. In the bedridden sections no day room space is provided. The dining room service for the ambulant patients is cafeteria style and a floor space of 26 square feet is allowed for each ambulant patient.

L. G. KIBBE.

## NOTES

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The New Psychiatric Clinic of the New York Hospital opened in September, 1932, under the direction of Dr. George S. Amsden.

—The New York Psychoanalytic Institute is offering a number of courses in psychoanalysis to be given during the coming fall and winter. Full information may be obtained from the Institute at 324 West 86th Street.

—Work on the new building for the Psychopathic Division of Bellevue Hospital is progressing rapidly, and it is hoped that the institution will be ready for occupancy early in 1933. Special provision for problem children is among the activities to be stressed in the future.

—Dr. C. Stanley Raymond, formerly assistant superintendent of the Walter E. Fernald State School, has been appointed superintendent of the Wrentham State School for Mental Defectives, to succeed the late Dr. George L. Wallace.

—In our July, 1932, issue we called attention to the appearance of a new periodical, "The Psychoanalytic Quarterly" of New York City. Unfortunately, in the note the word "Review" was used in place of "Quarterly" in two instances. "The Psychoanalytic Review" and the "Psychoanalytic Quarterly" are separate publications, the latter being a new magazine.

—The New York City Committee on Mental Hygiene announces the publication of a selective list of lecture courses in mental hygiene to be given in New York City during the winter and spring. The list includes lectures offered by universities, schools for social work, and private organizations. Single copies of the pamphlet at ten cents each, may be obtained from the committee.

—Dr. Edward W. Taylor, prominent neurologist and medical editor of Boston, died August 17, 1932. Dr. Taylor was editor-in-chief of the *Boston Medical and Surgical Journal*, 1912 to 1915. He was also on the editorial staff of the *Journal of Nervous and Mental Disease* for several years. His writings include a volume on "Psychotherapy" and one entitled "The Mental Element in the Treatment of Disease."

—*Understanding the Child*, a magazine for teachers, published by the Massachusetts Society for Mental Hygiene, devoted the issue of June 30, 1932, to a discussion of the bright child, and his needs in school. The discussion centers very largely about the work of Lewis M. Terman, and summar-



izes in several brief articles the mass of data presented by Terman and his co-workers in the series of Genetic Studies of Genius. These bulky volumes do not constitute easy reading and the popular summarizations should therefore prove useful to many.

—*Character and Personality*, a new journal described as an international quarterly of psychodiagnostics and allied studies, issued its first number in September, 1932, under the editorship of Robert Saudek of London. The growing number of objective studies in personality seems to justify a separate organ for their publication. That the articles will maintain a high level seems guaranteed by the long list of distinguished names among the editorial collaborators. Among the contributors to the first number are William McDougall, June E. Downey and C. G. Jung. A German edition of this journal will appear under the name *Charakter*.

—Dr. Frank Billings, distinguished physician, teacher of medicine and promoter of medical organizations and institutions, died at his home in Chicago, September 20, 1932, at the age of 78. In 1903 and 1904, Dr. Billings served as president of the American Medical Association. In 1906, he was president of the Association of American Physicians and in 1907, president of the National Association for the Prevention of Tuberculosis. He was deeply interested in the care of mental patients, and it was largely through his influence that additions for their care were made to Cook County Hospital.

—Dr. Charles P. Chapin, president of the Board of Visitors of Buffalo State Hospital, was killed in an auto accident near Factoryville, Pa., at about 1:00 a. m., September 29, 1932. Dr. Chapin, accompanied by two Buffalo friends, was returning from the Quarterly Conference of the Department of Mental Hygiene held in Central Islip State Hospital, September 27. The driver of the car in which Dr. Chapin was riding, in attempting to avoid the wreckage of another automobile, crashed into a truck. The car overturned and fatally injured Dr. Chapin.

Dr. Chapin was 73 years of age at the time of his death. He had been practicing medicine in Buffalo for 41 years. He was appointed to the Board of Visitors of the Buffalo State Hospital by Governor Smith in 1921. During the past four years he had served as president of the board.

—Dr. Victor A. Aimore, medical officer in charge of the Mount Alto Diagnostic Clinic of the Veterans' Administration, Washington, D. C., was shot and instantly killed by a patient on the morning of July 13, 1932. The patient who fired the shot was a veteran who had been under observa-

tion for suspected mental disturbance from October 30 to November 2, 1931.

Dr. Aimore was a native of New York. He was a graduate of the Georgetown University Medical School of the class of 1917. During the war he served in the Army Medical Corps and in October, 1920, entered the United States Public Health Service. In 1924, he left such service to take a position with the Veterans' Administration. He was highly esteemed both as a physician and executive officer. His tragic death at the age of 45 is greatly deplored.

—The Third International Congress of Eugenics was held in the American Museum of Natural History, New York City, August 21-23, 1932. This meeting was followed immediately by the Sixth International Congress of Genetics at Ithaca.

The program for the former Congress included several papers of psychiatric interest, as follows:

"Reduction in Fecundity of the Socially Inadequate, Including Sterilization and Contraceptive Advice," by Sir Bernard Mallet of London.

"Handwriting of Introverts and Extraverts," by June E. Downey.

"Is Heredity a Causative Factor in the Manic-Depressive Psychoses," by Horatio M. Pollock, Benjamin Malzberg and Raymond G. Fuller.

"Genetics of the Human Mind," by C. C. Hurst of England.

"Heredity in Psychoses," by G. P. Frets, of Holland.

—The September number of the *Annals of the American Academy of Political and Social Science* is devoted to the discussion of "Prohibition: a National Experiment." Twenty-two articles by prominent authors are presented and practically all phases of the subject are considered. In the section relating to prohibition and certain phases of social life, Dr. Haven Emerson discusses prohibition and mortality and morbidity, and Frederick W. Brown writes on prohibition and mental hygiene. Other articles deal with the effects of prohibition on agriculture, crime and economic changes.

In reading this symposium one is impressed with the complicated nature of the problem of control of the liquor traffic and with the difficulty that is everywhere met in establishing control that will prevent drunkenness and alcoholic physical and mental disease. The problem is made more serious by the fact that a considerable portion of the persons who engage in the liquor business have no regard for the health or social welfare of the rest of the population.

—Clifford W. Beers spent two months in Europe in the spring of 1932, in the interest of the Second International Congress on Mental Hygiene, which will be held in Paris, France, in 1935. Mr. Beers conferred with representatives of the French, Belgian and British Leagues for Mental Hygiene, and assisted at the general European conference on mental hygiene held in Paris. Mr. Beers' autobiography "A Mind That Found Itself," is being translated into French, German, Portugese and Japanese, with other translations to follow.

The officers of the International Committee on Mental Hygiene are: President, Dr. William A. White, of Washington; honorary presidents: Dr. William H. Welch, of Baltimore, representing North America; Dr. Gustavo Riedel, of Rio de Janeiro, representing South America; Dr. Edouard Toulouse, of Paris, representing Europe; Dr. Koichi Niyaki, of Tokio, representing Asia; Dr. Ralph A. Noble, of Sydney, representing Australia; and Dr. John T. Dunston, of Pretoria, representing Africa; vice-presidents: Dr. Charles F. Martin, of Montreal, representing Canada; Dr. Joseph Genil-Perrin, of Paris, representing France; Dr. Robert Sommer, of Giessen, representing Germany; Sir Maurice Craig, M. D., of London, representing Great Britain; Dr. G. C. Ferrari, of Bologna, representing Italy; and Dr. Adolf Meyer, of Baltimore, representing the United States. Treasurer: Thomas W. Lamont, of New York; general secretary, Clifford W. Beers, of New York; chairman of executive committee, Dr. Clarence M. Hincks, of New York and Toronto; chairman of finance committee, Orlando B. Wilcox of New York.

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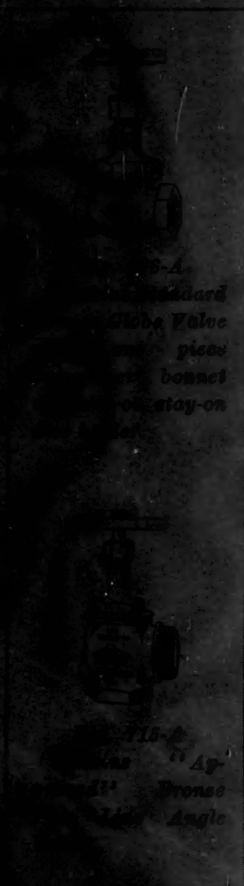
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